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# ECONOMIC BULLETIN FOR EUROPE

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The **ECONOMIC BULLETIN FOR EUROPE** is published three times a year, in May, August and November, and is intended to provide a regular review of the economic situation of Europe in the intervals between the publication of the annual *Economic Survey of Europe*.

The *Bulletin* is published entirely on the responsibility of the secretariat of the Economic Commission for Europe, and its contents, which are intended for the use both of Governments and of the general public, have not been submitted to the Member Governments of the Commission before publication.

#### SYMBOLS EMPLOYED

The following symbols have been used throughout this *Bulletin* :

- .. = not available or not pertinent.
- = nil or negligible.
- \* = estimate by the secretariat of the Economic Commission for Europe.
- = revised figure.

In referring to combinations of years, the use of an oblique stroke—*e.g.*, 1955/56—signifies a 12-month period (say from 1 July 1955 to 30 June 1956). The use of a hyphen—*e.g.*, 1954-1956—signifies an average of the full period of calendar years covered (including the end years indicated).

Unless otherwise indicated, the standard unit of weight used throughout is the metric ton. The definition of "billion" used throughout is one thousand millions. Minor discrepancies in totals and percentages are due to rounding.

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# ECONOMIC BULLETIN FOR EUROPE

Prepared by the

Research and Planning Division

ECONOMIC COMMISSION FOR EUROPE

Vol. 9, No. 1 May 1957



UNITED NATIONS

## CURRENT ECONOMIC DEVELOPMENTS IN EUROPE

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### 1. CURRENT TRENDS IN OUTPUT AND EMPLOYMENT

The rate of growth of industrial production slowed down in 1956 in the majority of western European countries<sup>1</sup> as a result either of the deflationary policies adopted by them or, as in the Netherlands, because expansion had come up against physical obstacles (see Table 1). In the United Kingdom and until recently in Denmark, there had even been an absolute decline in industrial output in the course of the year. The only countries where the rate of expansion was maintained at the high level of 1955 were France, Italy and Switzerland<sup>2</sup> where no—or only very gentle—brakes on expansion had been applied.

Figures for the fourth quarter of 1956 and those so far available for 1957 support earlier impressions<sup>3</sup> that the Suez crisis did not result in any major departure from earlier production trends. On the other hand, such increases in industrial production as did occur early in 1957 were partly due to particularly favourable weather conditions which affected not only building activity,<sup>4</sup> but also sectors connected with construction. At any rate, the available statistics cover too short a period to be taken as a sign of a renewed speeding up of expansion in industrial output. However, in Denmark and Yugoslavia there has already been a marked upturn in industrial production in the latter part of 1956. In Denmark, this has been concentrated

on consumer-goods industries—particularly textiles and clothing—reflecting the increase in real earnings and hence in consumer demand during 1956. In Yugoslavia, a rise in home demand for both capital and consumer goods, together with the successful export drive, was responsible for the considerable speeding up of industrial expansion since the third quarter of 1956.

As can be seen from the table and from Chart 1, output in the metal-using industries was mainly responsible for the slackening of industrial expansion in 1956 particularly in Austria, western Germany and the United Kingdom, where this sector was the one most affected by restrictive policy measures.<sup>5</sup>

In the motor-car industry, which was the branch most seriously affected by petrol rationing following the closing of the Suez Canal, some revival has already taken place in the United Kingdom.<sup>6</sup> Car output, after a very sharp decline, had returned in March to a level 7 per cent below that of a year earlier. The improvement was not only in home demand, assisted by the relaxation of hire purchase regulations, but even more so in exports, especially to the dollar area. Sales of commercial vehicles are also picking up, although production in the first quarter of 1957 was still substantially below earlier levels.

The output of chemicals speeded up again in the course of 1956 in the majority of countries and the

<sup>1</sup> For a more detailed analysis of the course of industrial production in 1956, see *Economic Survey of Europe in 1956*.

<sup>2</sup> For Switzerland, no production index is available, but the increase in employment continued at the same high rate as in 1955.

<sup>3</sup> See *Economic Survey of Europe in 1956*, Chapter III, Section 7.

<sup>4</sup> Building is not included in the index shown in the table.

<sup>5</sup> In the United Kingdom, the decline in output of motor vehicles and durable consumer goods outweighed increases in other branches of the engineering industry.

<sup>6</sup> The slow-down in the motor-car industry in the United Kingdom preceded the Suez crisis as a result of the hire purchase restrictions imposed to reduce consumer demand.

TABLE 1  
Industrial output by sectors in western Europe  
1953 = 100  
Adjusted for seasonal fluctuations

Country	1954 Year	1955 Year	1956 Year	1956				1957 Available months <sup>a</sup>
				I	II	III	IV	
<i>Total industrial production</i>								
France . . . . .	109	120	133	126	135	131 <sup>b</sup>	136	138 *
Yugoslavia <sup>c</sup> . . . . .	114	132	145	134	152	160	181	145
Western Germany . . . . .	112	129	139	134	140	141	140	144
Italy . . . . .	109	118	128	121	126	133	130	132
Belgium . . . . .	106	116	122	120	125	122	122	126
Norway . . . . .	109	117	122	120	122	121	127	125
Netherlands . . . . .	110	118	124	120	125	123	127	130
Austria <sup>d</sup> . . . . .	115	133	138	138	137	138	139	145
Sweden . . . . .	105	111	114	112	113	113	119	118
Finland . . . . .	114	127	130	109 <sup>e</sup>	138	143	133	143
United Kingdom . . . . .	108	114	113	114	113	113	113	113
Denmark . . . . .	106	112	111	109	106	111	118	119
Total of countries listed	109	119	125	122	126	126	127	129
<i>of which : Metal-using industries</i>								
France . . . . .	109	125	144	138	146	140 <sup>b</sup>	150	146 *
Western Germany . . . . .	118	146	159	155	160	160	159	163
Italy . . . . .	105	118	130	126	134	132	126	136
Belgium . . . . .	107	125	135	132	140	132	134	143
Norway . . . . .	108	121	124	118	124	125	127	122
Netherlands . . . . .	120	134	140	139	147	133	148	148
Austria . . . . .	118	156	156	160	158	155	152	142
Sweden <sup>f</sup> . . . . .	103	109	113	112	113	107	117	116
Finland . . . . .	114	126	126	108 <sup>e</sup>	131	135	133	137
United Kingdom . . . . .	110	121	117	120	116	115	116	..
Denmark . . . . .	118	122	118	117	113	119	123	124
Total of countries listed . . . . .	111	128	133	132	134	132	134	..
<i>of which : Textile industries</i>								
Continental western Europe . . . . .	106	107	113	109	114	114	115	122 *
United Kingdom . . . . .	103	101	101	101	103	98	100	103
Total western Europe . . . . .	105	105	109	107	111	110	111	116 *

*Sources and methods:* Data derived from national statistics have been experimentally adjusted for seasonal fluctuations by the secretariat of the Economic Commission for Europe. The adjusted series should at best be regarded as an indication of prevailing trends.

*NOTE.*—Countries are listed according to the rate of increase of total production in 1956.

<sup>a</sup> Generally two months.

<sup>b</sup> Not adjusted for effects of additional holidays granted for the first time during this period.

<sup>c</sup> Unadjusted for seasonal fluctuations.

<sup>d</sup> Including U.S.I.A. firms from 1955 onwards.

<sup>e</sup> Figures affected by strikes in March.

<sup>f</sup> Based on hours worked in metal industries.

recovery of textile production, reflected in the output figures and in other scattered data assembled in Table 2, has become fairly general. In the United Kingdom, textile production continued at or below the 1955 level. There had been a decline in activity in the cotton section, but the woollen section of the textile industry continued to enjoy a buoyant home

and export demand. A substantial improvement in order books and a reduction of short-time working occurred in the cotton sector in that country towards the end of 1956. The increase in orders appears, however, to be largely due to the re-building of stocks, and the longer-term outlook—particularly for exports—is still uncertain.

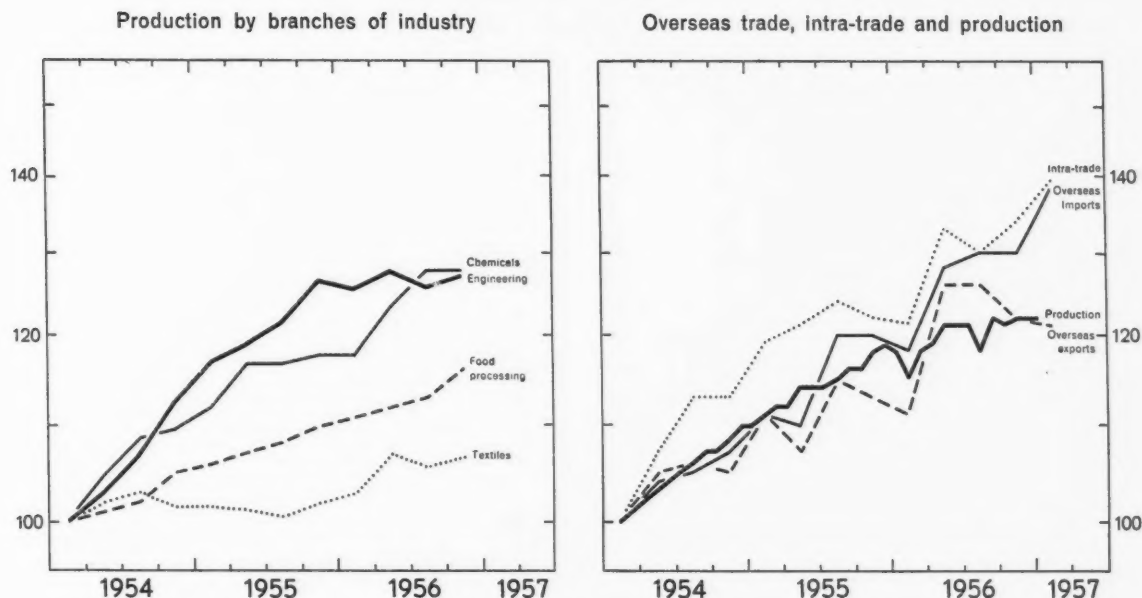
CHART 1

**Industrial production and foreign trade of western Europe**

*Index numbers — First quarter 1954 = 100*

*Adjusted for seasonal variations*

*(Semi-logarithmic scale)*



Sources : National statistics and OEEC Statistical Bulletins. Trade figures for the United Kingdom have been adjusted for dock strikes.

As was pointed out in the SURVEY for 1956, private consumption has replaced investment as the main domestic force for expansion in a number of countries. In the foreign trade sector (see Chart 1) intra-European trade and, even more so, overseas imports have resumed their upward trend in the latter part of 1956 and have been rising much more rapidly than industrial production, while overseas exports, which had been expanding greatly in the first half of 1956, registered a downturn.

On the whole, as will be seen in Sections 3 and 4, the maintenance or reinforcement of restrictive policies in those countries which had inaugurated them earlier, and the new efforts in others to reduce excess demand, make it unlikely that a more rapid rate of growth than in 1956 can be achieved in 1957.

The slowing down in the rate of expansion of output was accompanied by slackening pressure on labour resources in a number of countries, notably the United Kingdom and Sweden, and to a lesser extent, also western Germany and Austria, in the course of 1956. This is reflected in the movement of unem-

ployment and unfilled vacancies shown in Chart 2. Available evidence suggests that the same tendency continued into the beginning of 1957 although, here again, the exceptional weather conditions cover up the underlying trend: the severe winter of 1956 delayed the seasonal decline in unemployment whereas the exceptionally mild weather in 1957 hastened the resumption of seasonal activities.

In a number of cases, as can be seen from Table 3, the rate of increase in employment fell in 1956 or remained unchanged; exceptions are Denmark, where a decline in total man-hours worked<sup>7</sup> turned into an increase as the result of the revival of output in the latter part of the year, and France, Italy and Switzerland, where expansion continued unabated.

Another indication of the reduced pressure of demand on the labour market which can be derived from Table 3 is the decline in the working week.

<sup>7</sup> For Denmark, only figures for total man-hours worked are available; these are the combined result of changes in employment and in the working week.

TABLE 2

Indicators of conditions in the textile industries

Percentage increase in volume over corresponding period of previous year

	1955	1956			1957 Jan.
		First half	Third quarter	Fourth quarter	
<i>Orders</i>					
Western Germany (orders received)					
Total	17	10	3	13	7 <i>d</i>
Home market <i>a</i>	15	11	5	17	3 <i>d</i>
Export <i>a</i>	4	2	9	19	18 <i>d</i>
Netherlands (stock of orders)					
Total <i>a</i>	—	18	25	38	..
Home market <i>a</i>	-3	24	35	49	..
Export orders <i>a</i>	5	9	10	18	..
<i>Wholesale sales</i>					
United Kingdom	7	8	1	-3	..
Western Germany	8	7	5	5	5 <i>g</i>
<i>Retail sales</i>					
Austria					
Textiles	11	8	1	6	3 <i>d</i>
Clothing <i>b</i>	11	8	1	4	5 <i>d</i>
Belgium <i>c</i>					
Clothing <i>b</i>	10	8	1	10	6 <i>d</i>
Household textiles	4	8	7	10	6
Denmark					
Textiles and clothing <i>b</i>	-5	-9	8	8	4 <i>g</i>
France					
Textiles and clothing	5	3	8	15	15
Western Germany					
Textiles	11	12	10	13	— <i>g</i>
Textiles and clothing <i>b</i>	10	12	9	14	-1 <i>g</i>
Netherlands					
Textiles and clothing	11	17	14	17	5 <i>d</i>
Norway					
Textiles and clothing <i>b</i>	2	4	4	9	5
Sweden					
Clothing	3	-3	5	4	..
Switzerland					
Textiles and clothing	6	5	4	12	9 <i>d</i>
United Kingdom					
Textiles and clothing <i>b</i>	5	2	5	2	8 <i>d</i>
<i>Producers' stocks at end of period</i>					
Cotton yarns					
Belgium	—	-4	10	13	11
Denmark	7	4	..	-6	..
France	2	-22	-19	-19	..
Italy	-14	-12	-10	—	..
Norway	-19	-16	-17	-11	-6
Cotton fabrics					
Belgium	—	—	-10	-15	-20
Denmark	-9	-6	..	4	..
France	9	-9	-11	-13	..
Italy	-1	-10	-6	-8	..
Norway <i>e</i>	-3	-7	-7	..	..
Switzerland	5	..	..	-12	..
Wool yarns					
Belgium	7	3	—	-7	-6
Denmark	-9	-3	..	-7	..
France	-4	12	2	7	-5
Norway	-4	-2	-2	3	6
Wool fabrics					
Belgium	5	6	13	5	1
Denmark	-5	-12	..	-10	..
France	-4	-5	-10	-16	-12
<i>Wholesalers' stocks</i>					
United Kingdom <i>f</i>	-5	4	11	6	..
<i>Retailers' stocks</i>					
United Kingdom <i>a b c</i>	3	7	12	7	5

Sources: National statistics.

<sup>a</sup> Value instead of volume.

<sup>b</sup> Including shoes.

<sup>c</sup> Department stores only.

<sup>d</sup> January-February.

<sup>e</sup> All textile fabrics, including wholesalers' stocks.

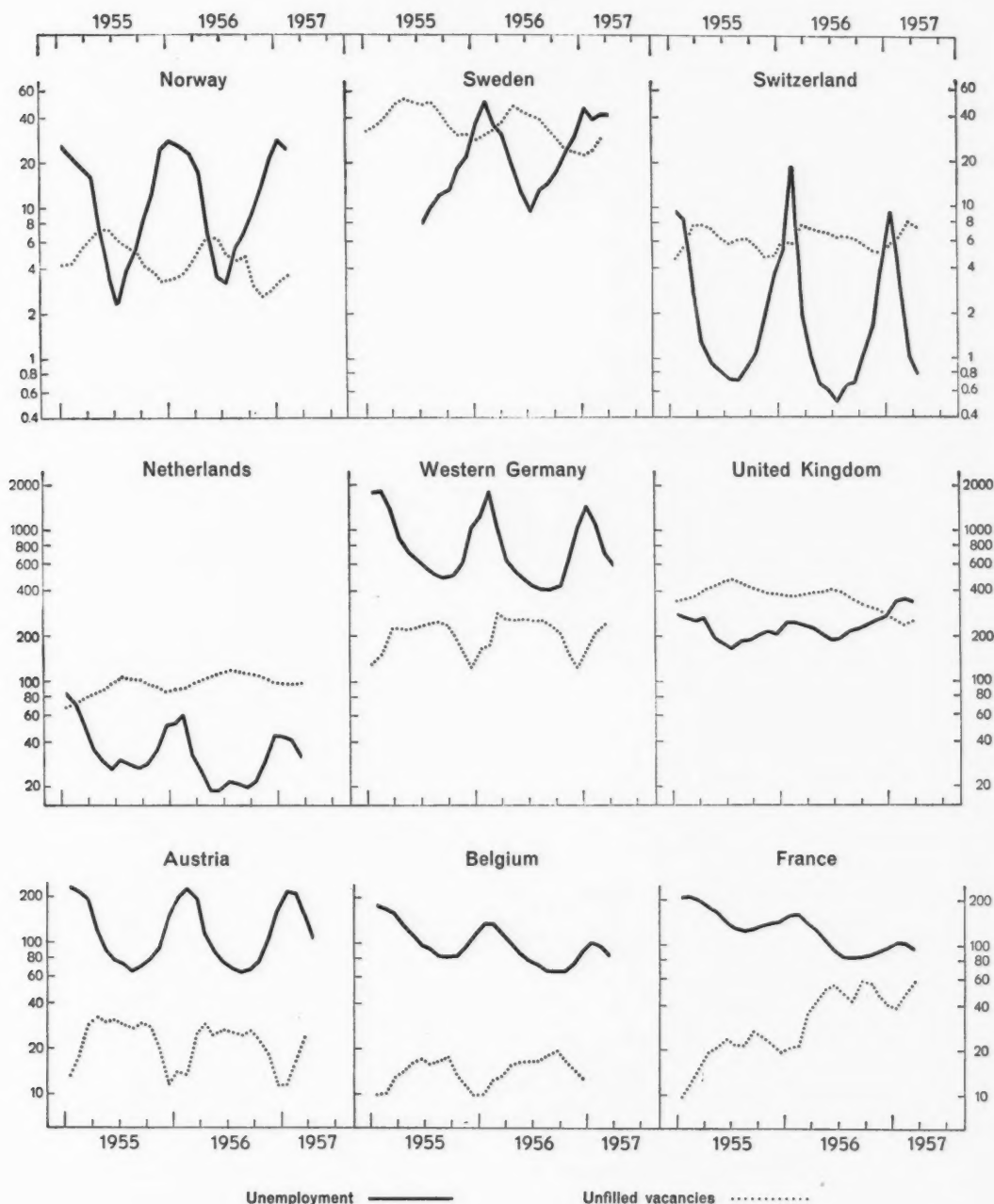
<sup>f</sup> Stocks are valued at cost and refer to textiles and clothing.

<sup>g</sup> First quarter.

CHART 2

**Total unemployment and unfilled vacancies in selected European countries**

*Thousands — Semi-logarithmic scale*



Sources : National statistics.

NOTE. — The figures constitute a reliable indication of trends in each country, but do not permit a comparison between countries of absolute levels of unemployment or unfilled vacancies.

Among the countries for which such information is available, this has occurred in the United Kingdom and Italy. In western Germany, the rapid decline in the working week in the course of 1956 is, however,

due to the introduction of a shorter standard working week without a compensating increase in overtime, a process which, as will be seen in Section 2, is not yet completed.

TABLE 3  
Employment and hours worked in industry  
Index numbers, corresponding period of previous year = 100

		1955	1956				1957 First quarter
			First quarter	Second quarter	Third quarter	Fourth quarter	
<i>Austria</i>	Employment	108	106	105	104	103	102 <sup>a</sup>
	Working week	102	101	98	100	101	103 <sup>a</sup>
	Total man-hours worked	110	106	103	103	104	106 <sup>a</sup>
<i>Belgium</i>	Employment	102	102	104	103	102	
<i>Denmark</i>	Total man-hours worked	99	93	93	98	101	106
<i>Finland</i> <sup>b</sup>	Employment	103	104	103	103	101	99
	Working week	100	100	101	100	100	99
	Total man-hours worked	103	104	104	103	101	98
<i>France</i> <sup>b</sup>	Employment	101	101	101	101	102	103
	Working week	100	101	102	102	102	101
	Total man-hours worked	101	102	103	103	104	104
<i>Western Germany</i>	Employment	109	109	108	106	104	104
	Working week	100	100	99	97	95	95
	Total man-hours worked	109	109	107	102	99	99
<i>Italy</i>	Employment	101	101	102	102	103	
	Working week	99	98	98	99	99	
	Total man-hours worked	100	99	100	101	102	
<i>Netherlands</i>	Employment	103	102	102	102	102	
<i>Norway</i>	Employment	102	101	101	100	100	100 <sup>a</sup>
<i>Sweden</i>	Employment	102	101	101	101	100	100
<i>Switzerland</i>	Employment	104	104	105	104	104	105
	Working week	100	100	100	100	100	100
	Total man-hours worked	104	104	105	104	104	105
<i>United Kingdom</i>	Employment	103	102	100	100	99	98 <sup>a</sup>
	Working week <sup>c</sup>	100	— 99 —	— 98 —	— 98 —	— 98 —	
	Total man-hours worked	103	101	100	99	98	

Sources: National statistics.

<sup>a</sup> January-February.

<sup>b</sup> Figures for 1956 and 1957 refer to the beginning of the quarter indicated.

<sup>c</sup> April and October.

NOTE. — The working week refers to actual number of hours worked or paid per week and per worker, as opposed to the normal or legal working week. Man-hours worked are either obtained by multiplying index numbers of employment with those of the working week or derived from aggregate man-hour statistics, as in the case of Denmark, western Germany and Italy.

## 2. THE UPWARD MOVEMENT OF WAGES AND PRICES

The upward trend of money earnings which was accelerated in 1956 continued in most countries during the first quarter of 1957. The available data shown in Chart 3 reflect the combined effects of changes in wage rates, reduced overtime and, in Belgium and western Germany, of compensation for shorter standard working hours. The pressure for wage increases remained strong in spite of the general easing of demand on the labour market, and was accompanied by strikes in a number of countries. In view of the time lag in wage statistics and of the fact that in some countries negotiations are still in progress and new claims are being put forward, it is too early to say with any degree of certainty what the course of money earnings is likely to be in 1957. On present indications, however, it would appear that in most countries there has been some slowing down in the upward movement of wages at the beginning of 1957.

In the Scandinavian countries, wage settlements are more or less synchronized. A two-year agreement was concluded in Sweden between workers' and employers' organizations which limits the increase of wages in 1957 to 2 per cent, with a provision for new negotiations should the cost-of-living index rise by more than 4 per cent between January and November. In Norway and Denmark, two-year agreements were made in 1956; in Norway, new wage increases are conditional on the cost of living's reaching a specified point,<sup>8</sup> and in Denmark also wage changes can take place only in automatic half-yearly adjustments for changes in the cost of living.

In the Netherlands, where the Government still exercises some influence on the over-all level of wages, an increase of 6 per cent in money earnings in January represented a compensation for extra social charges paid by workers,<sup>9</sup> and in July wages are to be further increased by about 2 per cent to make up for increases in rents. It is estimated that the average level of wages in 1957 will be something over 6 per cent above the 1956 average,<sup>10</sup> as against an average level in 1956 which was 9 per cent above that of 1955, but the rise in the cost of living resulting from the new measures to check the growth of consumption will permit only a very small increase in real wages.

In the United Kingdom, where wage movements are a more or less continuous process spread over the

year, increases of about 5 per cent which have so far been conceded do not yet cover a large number of workers. The rise in average wage rates so far in 1957 has therefore been less than the 7 per cent experienced in the first four months of 1956 but it is difficult to foresee later trends. In Austria and Finland, special measures have been taken or are under consideration to check the wage/price spiral. In the former country, wages continued to increase rapidly in the early months of the year, but the agreement concluded in March between the trade unions and the Government, as part of an over-all stabilization programme whereby wage demands are to be submitted to the Economic Commission of the Government, should impose a check on further wage increases as long as the cost of living can be maintained at its present level. In Finland, the programme submitted by the Government in March<sup>11</sup> would limit effective wage increases in 1957 to 3 per cent, as against trade union claims for increases of 10 to 12 per cent. In Spain, wage increases granted in 1956 were so substantial that no further upward movements appear at present to be contemplated.<sup>12</sup>

In France, there is every indication that the movement for wage increases will be started even if the Government succeeds in maintaining the stability of the cost-of-living index. However, given the need to check the rise in consumption which is imposed by the French balance-of-payments situation,<sup>13</sup> new wage demands are likely to encounter strong resistance on the part of the Government.

In western Germany and in Belgium, the rise in labour costs is the combined result of increases in wage rates and of the shortening of the standard working week with full wage compensation. In western Germany, the shorter standard working week affected, by the beginning of March 1957, almost half of the employed wage and salary earners. Workers in the building sector, large parts of the basic materials, investment goods and textile and clothing industries already benefit from the reduction from a 48-hour to a 45-hour working week. The process will be continued until the normal working week is reduced to 45 hours in all branches of industry. Whereas the increase in wage rates has slowed down, compensation for the shorter working week will maintain the rate of

<sup>8</sup> The Government announced its intention to make every effort to prevent any rise in the cost of living above 153 (in March the index stood at 152), and this is well below the level of 156 which would start a new round of wage negotiations.

<sup>9</sup> The increase is largely offset by the payment of a premium for the new old-age pension scheme.

<sup>10</sup> *Centraal Economisch Plan, 1957*, Centraal Planbureau.

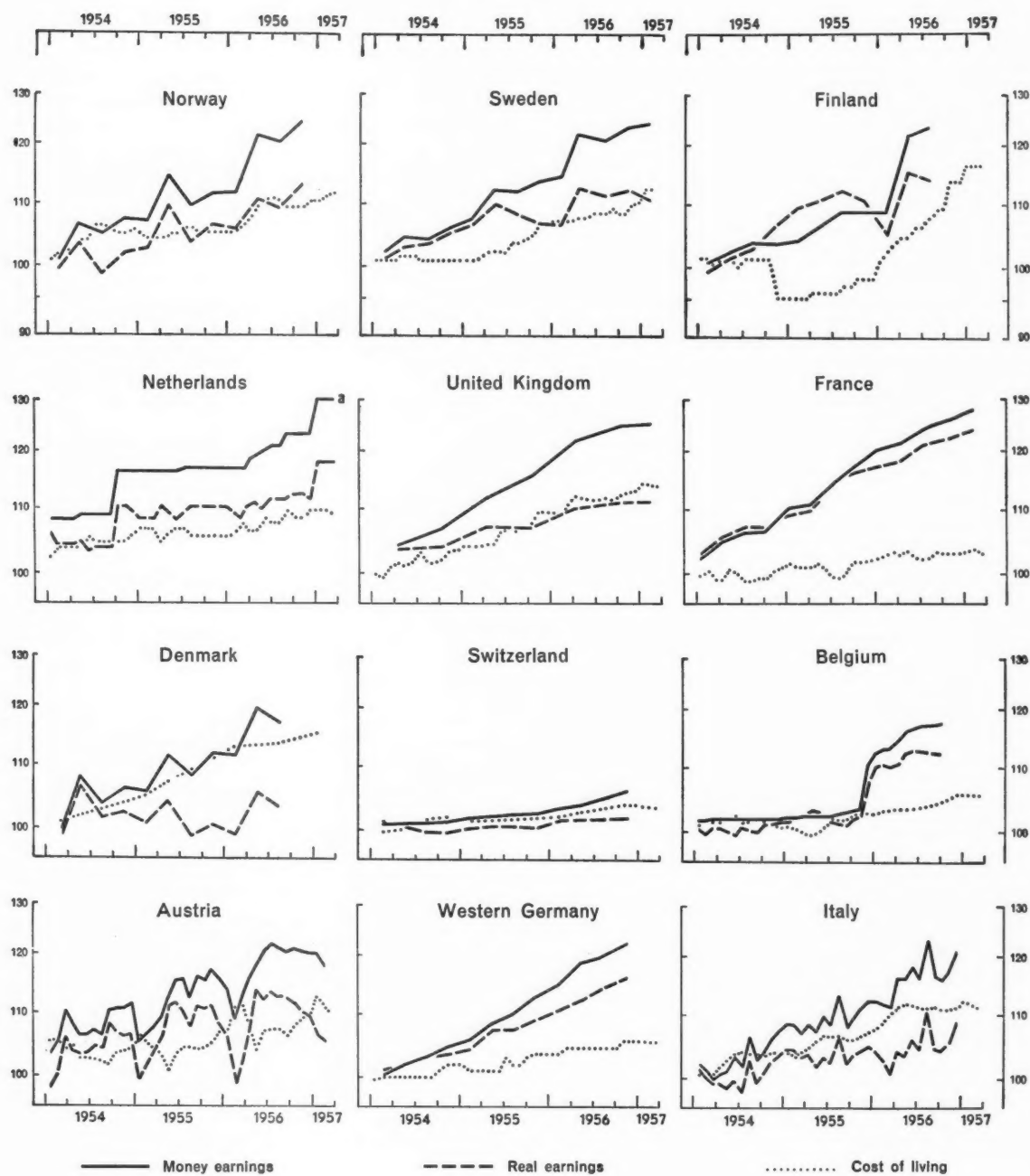
<sup>11</sup> See Section 3.

<sup>12</sup> The increases of spring and autumn 1956 partly compensated for the existing differences between actual wages and official wage rates, but implied, nevertheless, an effective rise in money earnings of 30 to 40 per cent.

<sup>13</sup> See Section 3.

CHART 3  
Earnings in manufacturing industry, and cost of living

Index numbers — 1953 = 100  
Semi-logarithmic scale



<sup>a</sup> Wage rates.

**TABLE 4**  
**Index numbers of the cost of living in western European countries**  
**1953 = 100**

	Food, drink and tobacco <sup>a</sup>				Industrial manufactures <sup>b</sup>				Housing				Fuel and light				Total <sup>c</sup>			
	1956			1957 March	1956			1957 March	1956			1957 March	1956			1957 March	1956			1957 March
	March	Sept.	Dec.		March	Sept.	Dec.		March	Sept.	Dec.		March	Sept.	Dec.		March	Sept.	Dec.	
Austria . . . . .	115	105	111	110	101	103	103	106	102	102	102	102	96	97	99	103	112	106	110	110
Belgium . . . . .	104	104	106	106	99	101	101	103	..	..	..	..	107	110	111	112	103 <sup>d</sup>	104 <sup>d</sup>	105 <sup>d</sup>	106 <sup>d</sup>
Denmark <sup>e</sup> . . . . .	116	114	115	109	109	111	113	115	114	114	121	121	123	129	129	130	113	114	116	114
Finland . . . . .	104	109	117	117	87	92	93	93	157	157	166	188	104	109	109	109	105	110	115	117
France . . . . .	102	101	100	99	101	102	103	105	135	140	140	142	100	94	95	95	103	103	103	103
Western Germany . . . . .	106	104	105	104	99	101	101	103	108	109	110	110	109	110	112	112	105	105	106	106
Greece . . . . .	122	122	121	122	125	125	126	127	154	154	154	154	130	127	135	139	126	126	126	128
Ireland <sup>f</sup> . . . . .	106	105	102	102	101	102	102	..	109	111	114	..	109	117	120	..	105	108	107	108
Italy . . . . .	110	111	111	109	101	101	101	101	154	158	160	183	100	102	103	104	111	112	112	111
Netherlands . . . . .	109	111	110	110	99	102	102	102	125	125	125	126	111	115	118	120	108	110	110	109
Norway . . . . .	109	112	112	113	99	101	101	103	115	115	115	118	116	124	126	128	107	110	110	112
Portugal . . . . .	107	104	107	105	99	96	99	99	117	118	117	118	103	103	108	108	106	103	106	104
Spain . . . . .	112	114	120	123	107	108	110	112	103	103	104	107	..	..	..	..	110	112	116	119
Sweden . . . . .	112	111	114	115	99	99	100	100	116	116	116	119	112	115	123	128	108	109	111	112
Switzerland . . . . .	104	106	107	105	98	98	98	99	106	109	109	109	100	102	105	104	102	104	104	104
United Kingdom . . . . .	112	111	113	113	105	106	106	106	110	114	115	115	120	122	127	127	111	112	113	114
Yugoslavia . . . . .	125	120	129	130	90	90	90	90	136	136	136	136	118	120	123	122	117	114	119	119

Sources: National statistics.

<sup>a</sup> In certain cases excluding drink and tobacco.

<sup>b</sup> For Finland, Greece, Ireland, Italy, Norway, Portugal, Switzerland and Yugoslavia the series refer to clothing only; for the other countries, clothing and household goods.

<sup>c</sup> Including other commodities and services in addition to those enumerated, but excluding taxes.

<sup>d</sup> Excluding rent.

<sup>e</sup> April, October and January instead of March, September and December.

<sup>f</sup> February, August and November instead of March, September and December.

increase in hourly money earnings at about the 1956 rate—i.e., an annual increase of about 10 per cent. In Belgium, the process of the reduction of the standard working week with the ultimate objective of a 6 per cent cut is more gradual;<sup>14</sup> and this, together with the continuation of overtime in some sectors, resulted in reductions of working time ranging from 3 to 6 per cent, but it appears that the increase in hourly earnings will be less steep than in 1956.

The upward drift of prices was maintained throughout 1956 in most countries, although it was generally more moderate in the second than in the first half of the year. It was only in Finland and in Spain that price increases, as illustrated by the cost-of-living indices shown in Table 4, continued rapidly. The main factor influencing price increases was the rise in wage costs and the connected rise in consumer demand, but in some countries—notably Finland,<sup>15</sup>

the United Kingdom and the Scandinavian countries—government policies to restrain demand through the reduction or abolition of subsidies and the increase in indirect taxes also helped to raise price levels. On the other hand, the stability of the cost-of-living index in France and the relatively moderate rate of increase in western Germany and Belgium were also the result of direct government action on prices.

More recently, the underlying trend of price movements was blurred by two opposing influences. There was, on the one hand, the moderate and short-lived effects of the Suez crisis on freight costs and prices of imported raw materials, more particularly of petroleum products,<sup>16</sup> and on the other hand, the stabilizing influence on food prices and cost-of-living indices of the particularly mild winter, which helped to increase the supplies of some foodstuffs very early in the year. Prices of manufactured goods continued to increase, and the trend of wholesale prices of manufactures—where such evidence is reliable—is also upward.

<sup>14</sup> In Sweden, the wage agreement already referred to also provides for a reduction in the standard working time by stages to 45 hours by 1 January 1960.

<sup>15</sup> Out of an increase by 19 per cent in the cost of living since December 1955, 12 per cent was caused by the abolition or reduction of subsidies.

<sup>16</sup> Most of the recent increase in the cost of living in Sweden and the United Kingdom was due to increases in fuel prices.

### 3. RECENT POLICY MEASURES

Restrictive policies introduced or reinforced by most countries in 1956 were effective in easing the pressure of over-all demand and, in some instances, they may have helped to reinforce the effects of more direct attempts to stabilize price levels. But the cost was a slowing down of the rate of industrial expansion.<sup>17</sup> Present indications are that in some countries wage increases in the early months of this year have not been quite as great as those which took place early in 1956 but, nevertheless, no government seems yet to consider it safe to reverse the generally restrictive trend of its policies. On the contrary, some governments are strengthening their efforts to counteract inflationary tendencies, and others which so far have taken little action are now resorting to measures designed to reduce excess demand.

In the Scandinavian countries, Austria and Yugoslavia, restrictive policies have been particularly effective in arresting or slowing down the growth of investment, and the conflict between the short-term objective of checking inflationary pressures and the need for investment to bring about the structural changes required for export expansion has therefore moved to the foreground of policy discussions in some of those countries.

In Denmark and Austria, efforts are now being made to revive investment activity once again. In Denmark, the Finance Minister has indicated that greater emphasis should be placed in the future on encouraging investment,<sup>18</sup> and a proposal for some relaxation of fiscal restraints on investment has already been submitted to parliament. But no comprehensive programme to deal with the related problems of industrial stagnation,<sup>19</sup> simultaneous wage and price increases and chronic balance-of-payments difficulties is likely to be devised before the general elections in May. In Austria, measures have been adopted recently to favour both public and private investment and to stimulate personal savings so as to reverse the shift from investment to consumption which had occurred in 1956. Moreover, efforts are being made to check the wage/price spiral through urgent appeals to trade unions and employers and also through more concrete measures. Thus proposed

price increases considered necessary on the basis of cost increases are to be examined by the Government's Economic Commission (which, however, has no power to enforce its views) and—should this prove ineffective—tariff, commercial and other policy measures may also be used, if necessary, in the interest of price stability. In Sweden, also, the decline in industrial investment is repeatedly evoked as a potential threat to future economic expansion but, so far, no major change in government policies appears to be contemplated apart from a bill proposing fiscal measures to stimulate personal savings.<sup>20</sup>

In Yugoslavia, on the other hand, the disinflationary programme introduced in 1956, and still in operation, was designed to slow down the growth of investment so as to release resources for private consumption and exports while, at the same time, changing the investment pattern away from industry and mining and towards agriculture, transport and social investment.

In the United Kingdom, where the rate of increase of industrial investment had slowed down significantly since the second quarter of 1956, the recent budget reflects the attitude expressed in the *Economic Survey* that "the outlook will continue to be dominated by the necessities of the balance of payments". Faced with the prospect that a certain rise in consumption is inevitable, and may take on significant proportions as a consequence of the upward movement of wages, the Government has preferred to avoid giving any additional stimulus to a fuller utilization of available productive capacity in the present year for fear of upsetting the improvement that has taken place in the external accounts. The year 1957 is thus looked upon as another year in which consolidation is necessary before the economy can be run at full blast and in conditions that will not unfavourably affect the internal, and above all, the external stability of the pound.

In consequence, the British budget proposals included only small changes in taxation, affecting mainly indirect taxes, but also increasing the exemption limits for certain income tax allowances in the higher income groups. Although the possibility of restoring the investment allowance had clearly been considered, it was ultimately concluded that, except in the special case of the shipping industry, it was not yet necessary

<sup>17</sup> For a detailed account of the reinforcement of deflationary policies in 1956 see *Economic Survey of Europe in 1956*, Chapter III, Section 6.

<sup>18</sup> Speaking at the Social Democratic Party Congress in January 1957.

<sup>19</sup> As already pointed out, there has been a revival in industrial expansion since the fourth quarter of 1956.

<sup>20</sup> The Finance Minister has suggested a tax on energy and fuel which would fall mainly on consumption; recently, a Parliamentary Committee has submitted a report on the implications of a general turnover tax.

—or safe—to give any new stimulus to investment demand.<sup>21</sup>

In western Germany, credit restrictions resulted in a marked slowing down of investment expansion in the second half of 1956, but concern over the effects of the new round of wage increases has brought a revival of the campaign of suasion which had been used by the Ministry of Economic Affairs in the autumn of 1955. Once again, trade unions and entrepreneurs are being urgently appealed to for moderation in their wage demands and in their price policies. More concrete measures are the raising of the banks' minimum required reserves and the reduction of re-discount quotas by 15 per cent. Since 1 May, the quotas have been further reduced by the amounts of commercial foreign credits received by banks. Moreover, a bill is expected to be passed before the end of June providing for 30 per cent cuts in tariff rates and for further import liberalization.<sup>22</sup> The freeing of imports is to serve the triple objective of checking price increases through a larger supply of imported goods, of reducing the inflationary impact of continuously rising export surpluses, and of restoring the west German balance-of-payments surplus to proportions which are less disturbing to international equilibrium. The present controversy over the inclusion of agricultural and revenue tariffs makes it doubtful whether the programme will have the intended effects.

Another measure under consideration in western Germany is a uniform tax reduction which it is hoped will increase personal savings and hence restore a more normal functioning of the capital market and increase the supply of risk capital. The main object of this measure would appear to be to achieve a better pattern of investment by lessening industry's dependence on self-finance and on bank credits. Measures intended to channel personal savings to the capital market and, in particular, to investment in shares, include a lightening of the tax burden on shares and the elimination of present fiscal privileges for such

activities as the construction of dwellings and investment by the public sector.

In the Netherlands, where expansion came up against physical limitations last year but had been left comparatively unhampered by deliberately restrictive policies, excess demand has recently resulted in a sharp deterioration of the balance of payments. The Netherlands Government therefore published a programme in February 1957 providing for cuts in national expenditure below the level that would have been reached without government interference. Both investment and consumption are to be curtailed by a variety of measures: the central government and the municipalities are to cut their investment expenditure, and the growth of private investment is to be slowed down through an increase in company taxation and a reduction in investment allowances. Private consumption will be affected by the abolition of certain food subsidies, an increase in indirect taxation and in postal, telephone and telegraph rates. These measures are, however, partly offset by concessions to the agricultural sector. The figures below give an indication of the estimated effect on real expenditure of the anti-inflationary programme once this has taken full effect.

#### Netherlands: National expenditure in 1956 and 1957

Billions of guilders at 1956 prices

	1956	1957 forecast <sup>a</sup>	Proposed reduction <sup>b</sup>
Private consumption . . . . .	18.62	19.20	—0.26
Gross fixed investment in enterprises . . . . .	6.66	7.11	—0.21
Stock changes . . . . .	1.04	0.35	—
	26.32	26.66	—0.47
Public expenditure . . . . .	5.37	5.28	—0.18
Gross domestic expenditure . .	31.69	31.94	—0.65
Net foreign balance . . . . .	—0.59	—0.21	—0.30
Gross national product at market prices . . . . .	31.10	31.73	—0.35

Source: *Centraal Economisch Plan, 1957*, Centraal Planbureau.

<sup>a</sup> Before cuts.

<sup>b</sup> Annual rates.

<sup>21</sup> The *Economic Survey 1957* (Cmd. 113) H.M.S.O., London, states that "We can look forward to further progress in industrial investment and with it further improvements in the living standards of the whole community only when the balance of payments has been placed on a really secure footing." An exception was made in the budget, however, for the shipping industry, which was granted a higher investment allowance. This was motivated above all by the difficulties of financing the replacement of old ships at the present levels of taxation, difficulties which were tempting ship-owners to register in countries flying flags of convenience, where tax liabilities are smaller.

<sup>22</sup> In anticipation of the adoption of these measures, special allotments of import quotas affecting mainly Japanese cotton and staple fibre fabrics have already been granted. Moreover, a greatly extended and unified free list affecting all non-OEEC countries with the exception of the dollar area and eastern Europe was put into force in May.

In view of the time-lag required for these measures to take effect, it is estimated that only the reductions in government consumption and investment will be fully realized during 1957, and that only about one-third and one-half of the estimated cuts of private consumption and private investment respectively will be achieved within the year.

The reduction in over-all domestic expenditure in 1957 by about 650 million guilders in 1956 prices below the potential level of 31.9 billion guilders has been kept deliberately small in relation to excess

TABLE 5  
France : Supply and use of resources<sup>a</sup>

	Index numbers of volume				Billions of current francs 1956
	1955	1956	1957		
			Hypothesis I	Hypothesis II	
			1954 = 100	1955 = 100	
Gross national product <sup>a</sup> . . . . .	107.5	104	104.5	103.5	16 220
Imports . . . . .	111.5	117	104 *	100 *	2 110
<i>Total supply</i> . . . . .	108	105.5	104.5	103.5	18 330
<i>Allocation of resources</i>					
Enterprises:					
Gross fixed investment . . . . .	112.5	109.5	107	107	2 170
Changes in stocks . . . . .	86.5	192.5	98 *	92 *	250
Households:					
Consumption . . . . .	108.5	105	105	103.5	11 890
Investment in dwellings . . . . .	112	95.5	96	93	680
Government:					
Consumption <sup>a</sup> . . . . .	92.5	129.5	110 *	105 *	1 000
Gross fixed investment . . . . .	113.5	103	102	100	380
Exports . . . . .	108	95.5	103 *	104 *	1 970
<i>Total gross expenditure of the economy</i> . . . . .	108	105.5	104.5	103.5	18 330
<i>of which:</i>					
Total gross fixed investment . . . . .	112.5	105.5	104	103.5	3 230

Sources : Rapport sur un projet de budget économique pour 1957, and Rapport sur les comptes de la nation de l'année 1956, Service d'études économiques et financières, Ministère des Finances, Paris 1957.

NOTE.—Figures marked with an asterisk have been estimated on the basis of index numbers of value after correction for estimated price changes.

<sup>a</sup> The wages of domestic and civil servants are excluded from gross national product and the relevant items of expenditure.

expenditure in 1956—estimated at some 1.5 billion guilders<sup>23</sup>—because it is feared that more drastic cuts would impart too great a deflationary bias to the economy. Should it appear that the programme is inadequate to restore balance-of-payments equilibrium, additional measures will have to be taken.

#### *The Pressure of Excess Demand in France*

In France, the continued high rate of expansion, together with the large claims on resources of increasing private consumption and military expenditure,<sup>24</sup> has led to serious strains on the balance of payments. Foreign exchange reserves (excluding the gold stock) are sufficient to cover only a one to two months' deficit at the present rate, and the difficulty of maintaining both expansion and external balance presents a particularly acute problem in that country.

<sup>23</sup> See *Economisch-Statistische Berichten*, 20 March 1957.

<sup>24</sup> From 1955 to 1956, savings by households declined from 7.7. to 7.2 per cent of disposable incomes, and public consumption (excluding pay to civil servants) rose by 29.5 per cent in volume.

The size of the problem of adjustment, and the efforts required to solve it, can best be illustrated by reproducing the hypothetical figures of gross domestic product and its utilization submitted to the Commission des Comptes de la Nation in March 1957<sup>25</sup> (Table 5). Under the first hypothesis, it is assumed that the trends of 1956 would continue unhampered. This would result in an increase in the balance-of-payments deficit with foreign countries by 170 billion francs, produced by a rise of 100 billion francs in the trade deficit and the reduction in American aid. The report rejects one alternative course which would arrest economic growth; and the figures under hypothesis II in the table represent the results of a compromise policy which is intended to provide the main lines of a "possible" solution. This aims at slowing down the rate of growth of total domestic demand, through a check to the expansion of public and private consumption, and at changing the pattern of demand so as to reduce its import content. It also

<sup>25</sup> See *Rapport sur un projet de budget économique pour 1957*, Service des études économiques et financières, Ministère des Affaires économiques et financières.

assumes that an increase of personal savings may be obtained through the creation of public or semi-public investment trusts which would provide attractive investment opportunities to the individual saver. The annual rate of growth of gross fixed investment by enterprises would be reduced from 9.5 per cent in 1956 to 7 per cent in 1957, and direct measures would be taken to stimulate exports.

A number of steps in implementation of such a programme have already been taken or are under consideration. They include a cut in public expenditure by 250 billion francs, or about 5 per cent of the 1957 budget appropriation, and a proposal for an increase in direct and indirect taxes by between 100 and 150 billion francs. The growth of consumer expenditure will be slowed down by the tightening up of hire-purchase regulations. Speculative imports are being curtailed by a 15 per cent tax on liberalized imports and the requirement of a deposit of 25 per cent of the value of the goods at the moment of issue of import licences. To bring about an export expansion, efforts are being made by the Government to conclude agreements with certain export industries whereby these undertake to increase their exports against certain benefits granted by the Government. Such an agreement has already been reached with the motor-car industries, which have undertaken to export two-thirds of the expected increase in their output in 1957. This would amount to an increase from 110,000 cars exported in 1956 to 190,000 cars in 1957.<sup>26</sup> Finally, the discount rate has been raised from 3 to 4 per cent and, in addition, banks have been requested to sift credit demands carefully with a view to slowing down credit expansion.

According to hypothesis II as shown in the table, the external deficit with foreign countries in 1957 would still exceed that of 1956 by 30 billion francs, raising the total deficit to 200 billion francs—a further deterioration of an already critical situation. Such a deficit could not be faced without substantial foreign credits or heavy drawings on central bank gold reserves. The question therefore arises whether under those circumstances, and with the need to increase public consumption (consisting, to a considerable extent, of military expenditure) by another 5 per cent, private consumption can be permitted to increase by 3½ per cent and investment by enterprises by as much as 7 per cent. To achieve immediate relief for the balance of payments, the measures recently introduced for the curtailment of imports seem, in any case, to be insufficient. But to restore

a more permanent balance of over-all demand and resources fairly quickly it also seems that more vigorous measures than those envisaged should be adopted—at least temporarily—in order to slow down the rate of expansion of private consumption and investment still further and thus to restrict demand for imports and to make more exports available.<sup>27</sup> A reduction of the rate of growth of consumption over the year 1957 as a whole even to the extent envisaged under hypothesis II might involve a cut in the absolute level of consumption during the rest of the year below that already reached—if it can be assumed that anything like the 1956 rate of growth has continued in recent months. This had to be done in the past in a number of other countries, notably the United Kingdom. This might be brought about by a combination of measures such as the raising of indirect taxes on some items—particularly on potential export commodities such as motor-cars—and through increases in direct taxation.

But if domestic demand is curtailed and commodities are thus freed for export, the long-term equilibrium of the French balance of payments will require other types of action also. The further measures already proposed in France to reduce import dependence—mainly by increasing domestic fuel resources—will take time to bear fruit; and among the problems still remaining are the disparities between internal and external prices and the need for more energetic efforts of export promotion, such as the organization of more efficient market research to ascertain the commodities and markets for which prospects are favourable.

#### *The Effort to stem Inflation in Finland*

Finland is the only country in western Europe where the economic difficulties from which the economy has suffered for some time past led to a serious inflationary crisis in 1956. The variety of measures adopted in the course of the year did not succeed in providing a solution to Finland's major economic problems: the inflationary bias inherent in the ties existing between wages and the cost-of-living index and between industrial and agricultural incomes, the inflated cost structure impairing the competitive position of Finnish export industries and, as a consequence of those problems, the precarious balance-of-payments position.<sup>28</sup>

<sup>26</sup> Negotiations are under way with other branches of the engineering industries.

<sup>27</sup> The only investment sector where a cut in expenditure is envisaged is the construction of dwellings. This is, of all sectors, the one least liable to provide relief to the balance of payments, and a cut in this sector has serious long-term social implications.

<sup>28</sup> For an analysis of Finland's problems and policies, see *Economic Survey of Europe in 1956*, Chapter III, pp. 32-33.

After protracted and difficult negotiations, the Government submitted a stabilization programme on 21 March. The programme falls into two parts; one dealing with the years 1957 and 1958, and the other with long-term developments. For the first period, index clauses for industrial wages would be maintained, but in a modified form; and it is proposed to give compensation for only two-thirds of the increases in the cost of living which have occurred since November 1955. In view of the 12 per cent wage increase accorded after the general strike in March 1956 and the wage slide since then, this principle would limit further increases to the equivalent of the prospective rise in productivity—i.e., about 3 per cent per year—whereas the trade unions now claim an increase of 10 to 12 per cent. At the second stage, the index-clause for wage agreements would be abolished altogether but in August of each year, simultaneously with the fixing of agricultural prices, the possibility of raising wages would be considered from the point of view of the over-all economic situation.

In the agricultural sector, the link with industrial earnings would be severed and compensation given only for changes in the general income level and that

only for increases which exceeded 2½ per cent per year. From 1959 onwards, a new consumer price index would be adopted, but there would be no automatic link between agricultural incomes and consumer prices.

A number of tax increases and other fiscal measures are proposed which will curtail consumer purchasing power and investment, the restrictive monetary policy is to be continued for the time being and a special export tax is designed to prevent monetary expansion coming from a possible rise in export earnings. Measures in the international trade field aim not only at reducing the present balance-of-payments deficit, but also at paving the way for future import liberalization. Licences issued for imports from western countries are to be curtailed to about 72 per cent of 1956 imports from those sources; but within these limits, global quotas are largely to replace the present system of bilateral quotas under trade agreements covering about 40 per cent of those imports.

However, in view of recent political events in Finland and of growing trade union opposition to the wages proposals, it is still impossible to judge whether the programme will ever come fully into effect.

#### 4. OUTPUT AND DEMAND PROSPECTS FOR 1957

##### *An Over-all View*

Continued and more widespread preoccupation with the balance of payments or with price developments—whether for their own sake or because of their effects on the external balance—is likely to involve in almost all countries of western Europe a slower rate of growth of the national product than the exceptionally rapid expansion experienced in the initial years of the economic upswing since 1953 and often also a slower rate of expansion than was achieved in 1956. Even more generally than in 1956, the limits to output will be set, not by shortages of capacity or manpower, but by the level of internal demand governments consider they can safely permit if internal and external stability are to be maintained.

For a few countries—the Netherlands, France, Norway, Sweden and Yugoslavia—official quantitative estimates exist of the expected trend in 1957 of gross national product and its allocation, and these are summarized in Table 6. For some countries—the United Kingdom and Denmark, for example—certain general indications of official expectations can be drawn upon. In four of the five countries shown in the table, gross national product is expected to increase in volume by no more than 3 per cent, and in the

Netherlands by only 1 per cent. The expected rise in the United Kingdom and Denmark would appear also to be of the order of magnitude of 3 per cent. This compares with earlier rates of increase of 4 or 5 per cent. In Yugoslavia, on the other hand, following shifts in the demand structure favourable to consumption and a more intensive use of the capacity of the building industry, and on the assumption of a good harvest, the national product should resume the rapid rhythm of expansion that was temporarily interrupted in 1956.

The claim on real resources made by the public sector, whether for investment or for current consumption, implying sacrifices of personal consumption and even more so of private investment, presents a problem in a number of countries. In Norway and Sweden, the public sector will be the greatest beneficiary of the relatively small increase in total supplies.<sup>29</sup> Some increase in public expenditure is expected to arise in western Germany from the defence programme. On the other hand, central government current expenditure in the United Kingdom should hardly increase now that the decision has been taken to scale

<sup>29</sup> In Norway, most of the increase in public investment is in public enterprises, while in Sweden it is mainly in social capital.

TABLE 6  
Forecasts of economic developments in certain countries

Percentage increases in volume over the previous year

	FRANCE			NETHERLANDS			NORWAY		
	1955 Actual	1956 Actual	1957 Forecast	1955 Actual	1956 Forecast	1957 Forecast	1955 Actual	1956 Forecast	1957 Forecast
Gross national product . . . . .	7	4	3 *	8	3 4	1	3	4 4	3
Imports of goods and services . . .	11.5 <sup>a</sup>	17 <sup>a</sup>	— *	12.5	9 12	1	6	3 7	4
Private consumption . . . . .	8.5	5	3.5	7	4 9	2	4	3 3	3
Total gross fixed investment . . .	12.5	10.5	3.5	..	..	..	4	— 1	4
of which : Private <sup>b</sup> . . . . .	12.5	9.5	7	12.5	7 12	4	7	— 2	3
Public . . . . .	13.5	3	—	3	5 8	—5 {	—	6 9	7
Public consumption . . . . .	—7.5	29.5	5	3	5 8	—5 {	—3	—	2
Exports of goods and services . . .	8 <sup>c</sup>	—5.5 <sup>c</sup>	3	9	6 6	5	5	6 10	6

	SWEDEN			YUGOSLAVIA		
	1955 Actual	1956 Forecast	1957 Actual	1955 Actual	1956 Forecast	1957 Forecast
Gross national product . . . . .	4	3	2.5	3	11	4 — 10
Imports of goods and services . . .	11	2	6	3	30 <sup>a</sup>	8 8 <sup>a</sup> 10
Private consumption . . . . .	3.5	3	2	2	7	.. —1 9
Total gross fixed investment . . .	1	4	2	4	..	.. ..
of which : Private <sup>b</sup> . . . . .	3	5	3	3	..	.. ..
Public . . . . .	—1	3	1	6	5	—17 —6 6
Public consumption . . . . .	3	5	4	5.5	7	.. — 3
Exports of goods and services . . .	6	2	10	6	5 <sup>a d</sup>	17 26 <sup>a d</sup> 13

Sources : National budgets and economic surveys. (For France, Table 5 and the sources used for that table.)

<sup>a</sup> Visible trade only.

<sup>b</sup> France and the Netherlands: Investment in enterprises; Norway: Actual 1955 and 1956 are increases in value; Yugoslavia: Public investment and investment credits to the private sector.

<sup>c</sup> Including the balance of invisible trade.

<sup>d</sup> Change in value.

down defence expenditure with immediate benefit in the current year. In Belgium too, an attempt is being made at stabilizing public expenditure, mainly by slowing down public building; in France also—as pointed out in Section 3—the budget for public expenditure is being reduced, and in the Netherlands, public expenditure will be 5 per cent less than in 1956.

In almost all countries of western Europe, investment demand and, in particular, demand for private industrial investment, is expected to rise relatively little. However, the picture may be changed in Denmark and Austria by the measures contemplated or already taken to stimulate investment, which have been referred to in the preceding section. The principal danger to economic stability, not only in countries with an uncertain outlook for their balance of payments, but also in others, such as western Germany, is considered to be the possibility that recent and foreseeable increases in personal incomes, particularly in wages, may induce an excessive rise in consumer demand.

### Investment Demand

To induce—or at least not to counteract—a levelling-off of investment activity seems to be an object of policy even in countries which would look favourably upon a higher investment ratio if it could be achieved without adding to the total demand on resources. (Two exceptions—Austria and Denmark—have already been mentioned.) Thus—as was mentioned in Section 3 of this review—no inducement was given in the recent British budget to accelerate the growth of fixed investment, apart from a higher investment allowance for shipping, in spite of the recognized need, in the long run, to ensure that the desire to invest does not subside and of the uncertainties with regard to the level of private investment after 1957. Public investment in the United Kingdom is planned to increase,<sup>30</sup>

<sup>30</sup> “ But the investment demand is still the main expansionary force at home, and after the private investment boom of the last two years, public sector investment may well make the running.” *Bulletin for Industry*, Treasury Information Division, March 1957.

TABLE 7

Indicators of building activity in certain western European countries  
Dwellings and industrial building

Percentage increase over corresponding period of previous year

		Dwellings					Industrial building				
		1956				1957	1956				1957
		I	II	III	IV		I	II	III	IV	
Belgium . . . . .	Authorizations . .	+2				..	+14 <sup>a</sup>	+7 <sup>a</sup>	+8 <sup>a</sup>	+3 <sup>a</sup>	..
	Completions . . .	-7	-5	-6	+1	..	-3 <sup>a</sup>	+10 <sup>a</sup>	+9 <sup>a</sup>	+3 <sup>a</sup>	..
Denmark . . . . .	Authorizations . .	+116	+53	-3	-15	- <sup>b</sup>	..	..	..	..	..
	Starts . . . . .	+50	+55	+40	-9	+45	+20	-22	+4	+14	..
	Completions . . .	-21	-14	-38	-13	+42	-26	+18	-20	+27	..
Finland . . . . .	Authorizations . .	-17	-12	-6	-15	..	-43	-23	+1	+15	..
	Completions . . .	+8	—	-11	-15	..	+39	+117	+56	+38	..
France . . . . .	Authorizations . .	+39	+27	+23	+3	..	..	..	..	..	..
	Completions . . .	—	+14	..	..	..	..	..	..	..	..
Western Germany	Authorizations . .	-2	-8	-14	-11	-9 <sup>b</sup>	+42 <sup>c</sup>	+14 <sup>c</sup>	+9 <sup>c</sup>	+2 <sup>c</sup>	-6 <sup>b c</sup>
	Completions . . .	+10	+14	+5	—	+2 <sup>b</sup>	+30 <sup>a</sup>	+30 <sup>a</sup>	+18 <sup>a</sup>	+12 <sup>a</sup>	..
Italy . . . . .	Authorizations . .	+14	+3	-5	-12	..	+4 <sup>a</sup>	-11 <sup>a</sup>	+7 <sup>a</sup>	-14 <sup>a</sup>	..
	Completions . . .	+14	+11	+10	+8	..	+6 <sup>a</sup>	-23 <sup>a</sup>	-21 <sup>a</sup>	+4 <sup>a</sup>	..
Netherlands . . .	Authorizations . .	+22	+12	+18	+44	+9	+60	+68	+13	+3	-22
	Starts . . . . .	-8	+23	+3	+29	+73	+101	+16	+29	+33	..
	Completions . . .	+28	+14	+9	+7	+68	-7	+17	+22	+5	..
Norway . . . . .	Authorizations . .	-27	-23	+8	-4	..	+120	+190	-15	+22	..
	Completions . . .	-8	-6	-23	-20	..	+15	+41	-54	-12	..
Sweden . . . . .	Authorizations . .	-19	+41	-25	-14	+5	+42	-30	+83	-29	+170
	Starts . . . . .	+43	+39	-21	-14	-16	..	..	..	..	..
	Completions . . .	+27	-30	-16	+5	+15	-12	+56	+184	+30	..
Switzerland . . .	Authorizations . .	-15	-15	-31	-25	-25	+1	+16	+13	+2	+14
	Completions . . .	+6	-19	+12	+3	+5	..	..	..	..	..
United Kingdom .	Authorizations . .	..	..	..	..	..	-9	-52	-4	-10	-37
	Starts . . . . .	-1	-7	-20	-12	..	-5	-17	-13	..	..
	Completions . . .	-18	+4	-4	-2	+13	+35	+9	+23	..	..

Sources: National statistics.

<sup>a</sup> All non-residential buildings.

<sup>b</sup> January-February.

<sup>c</sup> Building for economic activity.

largely on account of the acceleration of the power programme and larger expenditure on roads, but the growth of private investment, as indicated by the following table, has been slowing down during 1956 and according to the plans of the companies participating in the latest investment inquiry (information submitted last November) the 1957 rate of investment in private industry is unlikely to be significantly higher than that of last year.<sup>31</sup> According to latest

indications,<sup>32</sup> the outlook for the rest of private industry is similar, so that gross fixed investment as a whole (including dwellings) should rise moderately. The rise in volume should be of the order of 3 to 4 per cent, or about the same as in 1956.

<sup>31</sup> Expected investment in 1957 is 1 per cent above the expected investment of the same companies for 1956. Actual investment will, no doubt, fall short of expectations, as it did in 1956.

<sup>32</sup> *Bulletin for Industry*, April 1957.

**Fixed capital expenditure by manufacturing industry  
in the United Kingdom**

	Percentage increases in 1956 over corresponding periods of 1955					Expected expenditure in 1957 <sup>a</sup> per cent
	I	II	III	IV	Year	
Plant and machinery . . . . .	24	22	13	17	18	3
Vehicles . . . . .	15	22	-7	3	8	
Building work . . . . .	44	38	19	19	28	-7
Total . . . . .	29	26	13	17	20	1

Sources : Board of Trade Journal, 29 December 1956 and 27 April 1957.

NOTE. — The estimates are derived from returns mainly of companies whose securities are quoted on the Stock Exchange. The increase in the actual expenditure between 1954 and 1955 according to this inquiry compares satisfactorily with the increase reported by a more representative selection of companies covered by the provisional results of the Censuses of Production for the same years.

<sup>a</sup> Percentage increase over planned expenditure for 1956.

Among the Scandinavian countries, where restraints on investment have been in force longest, private gross fixed investment in Sweden is expected to rise by 3 per cent (against a 6 per cent increase in public investment) while investment in manufacturing industry will not increase at all. In Norway, most restrictions remain in force, but an increase of 3 per cent in private gross fixed investment is foreseen as a result of the duty-free admission since January of certain kinds of machinery, the easier self-financing from the high profits enjoyed by the export industries and a higher building quota for industry.

In France, where investment activity has been left unhampered, the authorities are anxious that the rate of expansion of private investment should be least affected by the measures taken or under review to slow down the growth of demand. Gross fixed investment by enterprises is intended to rise by 7 per cent in volume above its 1956 level, as against increases of 9.5 per cent in 1956 and 12.5 per cent in 1955.<sup>33</sup>

Italy is in a rather special position in that private investment in 1956 was maintained at the high level of the preceding year, but the fall in public investment has accentuated official concern over the long-term development of the country, which is so dependent on investment by the public sector, particularly in the south.

Limitation of demand in the building sector is usually an important part of a disinflationary programme aiming at the control of the rate of investment. The expected decline in industrial building in the United Kingdom has already been noted, and the downward trend is confirmed by the decline in authorizations for factory building shown in Table 7.<sup>34</sup> The

<sup>33</sup> See Section 3.

<sup>34</sup> Authorizations are not, of course, a complete guide to the amount of building work that will actually be carried out. The *Economic Survey 1957*, p. 44, suggests that industrial building and miscellaneous private work other than housing should not be "much below the 1956 level".

net effect of the restrictions on demand is likely to be that the total volume of building output, including dwelling construction, will be of about the same order of magnitude as in 1956, when it was some 6 per cent higher than in the previous year.

In Yugoslavia, the increase in construction output planned for 1957 is 8 per cent (after a decline by 12 per cent in 1956) as compared with an increase of 6 per cent for total fixed investment within the plan, but this is to be achieved with existing capacity.

In most countries, dwelling construction is expected to bear the brunt of attempts to limit over-all building activity. In general, this reflects merely a continuation of policies adopted some time ago, but in Belgium housing subsidies were reduced only in 1956. Judging from data on housing starts and authorizations in Table 7, it is clear that in all countries, with the exception of the Netherlands, Yugoslavia and western Germany,<sup>35</sup> the pace of housebuilding is slowing down.<sup>36</sup> In France, where a considerable backlog of housing needs still remains, it is intended nevertheless to curtail the volume of expenditure on the construction of dwellings.

Some indication of the immediate outlook for investment in machinery and equipment can be gleaned from the data on incoming home market orders and the order stock in the metal-using industries shown in Table 8 for four countries.<sup>37</sup> These offer some confirmation of the expected slowing down in the United Kingdom and of the stronger upward trend in the other three countries, where restrictive measures have not so far been significant. Home market orders in Belgium have been coming in at a level well above that of 1955 and some increase in industrial investment in 1957 seems probable, though it will perhaps be less than in the previous year. In western Germany, there was a tendency in the latter part of 1956 for orders to come in at a slower rate. The most recent indications are that, after this temporary halt, the former rate has been resumed. In any event, a reduction in the size of order books of the investment goods industries was one of the aims

<sup>35</sup> In western Germany, dwelling construction would probably have declined were it not for the measures taken by the government to counteract the shortage of private funds resulting from credit restriction. It is now expected that the record figure of dwellings completed in 1956 will probably again be reached.

<sup>36</sup> The number of dwellings completed in Denmark, which fell drastically in 1956 from the peak reached in 1954 and 1955, will probably rise by about 10 per cent, in spite of the smaller number of subsidized dwellings to be completed.

<sup>37</sup> These indices must be interpreted with a great deal of caution, particularly for countries where imported machinery and equipment cover a large part of the investment needs.

TABLE 8  
Orders received and stocks <sup>a</sup> of orders in metal-using industries

Volume or value  
Corresponding period of previous year = 100

	Total orders						Home market orders					Export orders						
	1955 year	1956				1957 Jan.	1955 year	1956				1957 Jan.- Feb.	1955 year	1956				1957 Jan.- Feb.
		I	II	III	IV			I	II	III	IV			I	II	III	IV	
<b>Belgium</b>																		
Shipbuilding . . . . .	110	615	197	223	240	75	..	681	104	123	335	..	..	694	371	279	190	..
Machinery . . . . .	113	148	120	126	119	106	..	121	118	127	115	..	..	211	108	127	127	..
Vehicles . . . . .	107	135	127	128	74	98	..	96	124	133	59	..	..	268	143	142	116	..
Electrotechnical equipment .	115	119	124	122	102	109	..	114	122	119	112	..	..	123	118	121	102	..
Heavy engineering . . . .	116	138	123	127	127	95	..	150	126	123	132	..	..	151	88	138	117	..
Total metal-using industries, excluding shipbuilding . .	112	132	124	129	114	109	..	121	124	133	115	..	..	164	109	122	120	..
<b>Western Germany</b>																		
Machinery . . . . .	(124)	(104)	(102)	(93)	(96)	(101)	128	104	102	89	89	106	132	122	118	118	119	109
Vehicles . . . . .	(123)	(111)	(110)	(114)	(96)	(109)	119	110	104	105	88	104	119	117	128	133	121	126
Electrotechnical equipment .	(115)	(103)	(110)	(104)	(106)	(110)	116	105	113	105	106	108	129	130	132	123	128	134
Metal goods . . . . .	(116)	(100)	(108)	(104)	(104)	(112)	119	104	113	106	106	114	114	97	108	108	121	124
Steel constructions . . . .	(109)	(109)	(144)	(101)	(106)	..	115	116	113	104	84	..	83	88	429	143	437	..
Total metal-using industries	(121)	(104)	(106)	(101)	(99)	(105)	122	105	107	99	96	106	127	119	119	119	126	115
<b>United Kingdom</b>																		
Machine tools . . . . .	122	105	84	90	80	80	130	104	82	82	72	68	101	108	96	120	106	121
Machine tools . . . . .	124	122	116	110	102	96	131	127	118	111	101	91	104	108	110	108	106	105
Oil equipment . . . . .	154	117	119	132	130	..	..	..	..	..	..	..	..	..	..	..	..	..
Shipbuilding . . . . .	(367)	(116)	(177)	(61)	(126)	(190) <sup>b</sup>	..	..	..	..	..	..	..	..	..	..	..	..
Shipbuilding . . . . .	(122)	(123)	(126)	(119)	(122)	(127) <sup>b</sup>	..	..	..	..	..	..	..	..	..	..	..	..
<b>Netherlands</b>																		
Shipbuilding . . . . .	114	142	152	129	125	..	116	137	142	136	113	..	110	153	173	120	144	..
Machinery . . . . .	125	119	123	127	115	..	127	117	124	130	120	..	122	121	118	116	103	..
Transport equipment (excl. shipbuilding) . . .	92	133	131	130	136	..	95	134	131	121	120	..	71	130	129	192	255	..
Electrotechnical equipment .	114	119	120	112	113	..	121	129	129	114	115	..	108	110	112	111	112	..
Total metal-using industries	116	132	135	123	120	..	118	133	134	126	117	..	112	129	136	118	128	..

Sources: National statistics.

<sup>a</sup> Stock of orders at the end of period.

<sup>b</sup> First quarter.

Key: 123 Value index of orders received;  
(123) Volume index of orders received;  
123 Value index of stock of orders;  
(123) Volume index of stock of orders.

of the restrictive credit policy and need give no rise to concern as long as delivery dates remain abnormally long and a decline does not continue over too long a period. Furthermore, there are signs that the boom in the consumer goods industries is beginning to stimulate a revival of orders in the investment goods sector. In Austria, too, it is reported <sup>38</sup> that order books in investment goods industries have been diminishing in the last several months and this was probably part of the evidence of slackening investment

<sup>38</sup> Cf. *Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung*, February 1957.

activity which led to the adoption of measures to encourage investment.

Shipbuilding orders show an upward trend everywhere. In Norway the national budget provides for a continuation of the very high rate of acquisitions that was achieved in 1956. United Kingdom shipbuilders are confident that they can raise their output in 1957 with the existing labour force by about 15 per cent if, as is probable, sufficient steel supplies are forthcoming. The other main shipbuilding countries, in particular western Germany, appear to be working more or less at capacity.

TABLE 9

Retail sales by commodity groups

(Percentage increase over the corresponding period of previous year)  
Increase in volume except for figures in italics, which represent increases in value

Country and period			Food <sup>a</sup>	Tobacco	Clothing	Furniture	Hardware	Electric appliances	Total retail sales <sup>b</sup>	Passenger cars <sup>c</sup>	Motor-cycles and scooters <sup>c</sup>
Austria . . . . .	1956	First half . . .	4	14	8	15	13	18	5	14	-17
		Third qtr. . .	2	9	1	1	-2	14	2	1	-40
		Fourth qtr. . .	7	5	4	9	11	9	6	13	-67
	1957	Jan.-Feb. . . .	2	6	5	12	15	8	4	27	-54
Denmark . . . . .	1956	First half . . .	-2	—	-9	-7	—	6	-3	-1	..
		Third qtr. . .	1	-3	8	15	—	9	4	25	..
		Fourth qtr. . .	3	—	8	14	—	6	6	—	..
	1957	First qtr. . . .	3	..	4	..	—	..	6	14	..
France . . . . .	1956	First half . . .	5	10	3	10	13	22	7	17	-18
		Third qtr. . .	9	-2	8	22	13	28	10	11	-18
		Fourth qtr. . .	12	3	15	17	15	..	14	12	..
Western Germany	1956	First half . . .	8	9	12	19	16	21	11	33	-30
		Third qtr. . .	6	6	9	14	11	19	8	14	-40
		Fourth qtr. . .	7	7	14	10	13	13	9	6	-41
	1957	First qtr. . . .	—	2	-1	11	11	10	1	7	-39
Netherlands . . .	1956	First half . . .	(6)	6	17	23	14	22	(7)	21	19
		Third qtr. . .	(1)	7	14	21	15	27	(6)	11	-30
		Fourth qtr. . .	(3)	8	17	25	17	15	(8)	-3	-33
Norway . . . . .	1956	First half . . .	7	4	4	..	—	8	7	-24	-10
		Third qtr. . .	2	..	4	..	—	9	3	16	1
		Fourth qtr. . .	6	..	9	..	—	11	5	42	-59
Sweden . . . . .	1956	First half . . .	—	(4)	-3	6	-1	12	2	4	..
		Third qtr. . .	-1	..	5	1	9	11	2	9	..
		Fourth qtr. . .	—	..	4	-4	16	9	3	-4	..
Switzerland . . .	1956	First half . . .	7	4	5	14	10	7	7	15	-16
		Third qtr. . .	4	4	4	19	13	4	4	5	-30
		Fourth qtr. . .	7	5	12	8	10	3	8	5	-16
	1957	Jan.-Feb. . . .	2	4	9	13	9	9	5	46	-4
United Kingdom .	1956	First half . . .	-1	(3)	2	3	12	2	—	-7	-20
		Third qtr. . .	2	(—)	5	3	2	—	1	-29	-47
		Fourth qtr. . .	3	(—)	2	3	4	-10	2	-40	-9
	1957	Jan.-Feb. . . .	2	..	8	16	2	19	4	-31	94

Sources: National statistics.

NOTE. — Figures in parentheses are based on consumers' expenditure, whereas other data are derived from retail sales statistics.

<sup>a</sup> In Denmark, western Germany and Switzerland sales of food also include sales of drink and tobacco.

<sup>b</sup> Excluding motor vehicles.

<sup>c</sup> Based on new registrations, with the exception of Norway, where figures refer to available supplies.

Consumer Demand and Incomes

As has already been mentioned, the possibility of an excessive rise in consumer demand engendered in the main by recent or imminent increases in wages and, as in western Germany, by higher social security

transfer payments, is considered in a number of countries to constitute the immediate threat to the price level or to the balance of payments. Fears on this score are now prevalent, not only in countries such as Denmark, Sweden, and the United Kingdom, where attempts to keep in check both consumption

and investment have for some time been the order of the day, but also in others which, so far, have exercised little or no restraint on the growth of consumption, such as France and western Germany.

Thanks to a settlement in February of the wage issue,<sup>39</sup> the danger from this quarter in Sweden would seem to have been more successfully removed than had dared be hoped when the national budget was first drawn up, though the possibility of a wage slide beyond these limits cannot be excluded. In Norway, too, private consumption is expected to show no more than its usual annual increase. In Denmark, on the other hand, signs of a revival of consumer demand are already evident (as can be seen from Table 9 showing index numbers of retail sales) and the Government appears to be resigned to its continuation at the cost of some further deterioration in the balance of payments. The present round of wage awards and negotiations in the United Kingdom suggests the probability of something like a 5 per cent increase in the wage bill, and much will depend on how far this additional income is turned into effective demand, rather than saved, and so induces a rise in activity at the risk of a renewed increase in imports and possibly some diversion of exports. Even without the imminent increases in wages some rise in consumption would probably take place as the initial effects of hire purchase restrictions wear off. In the Netherlands, as a result of measures taken to curb consumer demand, private consumption should not rise by much more than about 2 per cent in volume. The plans to slow down the growth of private consumption in France in 1957 have been discussed in Section 3, and it has already been suggested that the increase of  $3\frac{1}{2}$  per cent over the 1956 level which is now foreseen may yet have to be further reduced.

In western Germany, there is also growing concern over the inflationary effects of a further rise in consumption though the position is fundamentally much more favourable, given the ample foreign exchange reserves and hence the possibility of admitting more imports. But the stimulus given to consumption by the increase of money wages in 1956 is now being reinforced by new wage and salary awards, particularly in the building and textile industries, and by the rise in net pension payments which has just taken place.<sup>40</sup>

In contrast with all the countries mentioned above, the Yugoslav plan for 1957 provides for some redistri-

bution of resources in favour of consumption, though this is stated to be the last concession that can be made at the expense of a continued high rate of investment. The share of consumption in national income is to rise from 67 per cent in 1955 and 70 per cent in 1956 to 73 per cent in 1957, while the share of net investment and defence should fall. Per capita consumption should thus rise in 1957 by 7.5 per cent.

That some revival of consumption is under way in most countries would seem to be confirmed by the statistics of retail sales shown in Table 9. The revival seems to be particularly marked in the case of Denmark and the United Kingdom, and in the latter country is partly confirmed by the most recent rise in outstanding hire purchase debt. The lengthening of order books in the consumer-goods industries of Austria, as revealed by the February "Konjunkturtest", may indicate some revival of consumer demand in that country also.

#### *Balances of Payments*

Some improvement in the balance of payments is hoped for in most countries in 1957. The favourable turn taken in 1956 in Sweden, the United Kingdom (reflected in the change in foreign exchange reserves shown in Table 10) and in Yugoslavia is expected to persist, as it is also in Norway, where the rise in freight rates has helped to increase foreign exchange receipts. In France, Finland and the Netherlands, where a serious deterioration of the foreign balance has occurred, a reduction in imports is a major object of policy and is regarded as the key to the improvement in the payments position, although it is generally hoped that exports will develop as satisfactorily as in the past year.

A limited rise in the volume of imports can hardly be avoided in countries where restrictions have been in force for some time, and in some instances it will be accompanied by higher import prices. In Norway, higher incomes and output, it is thought, will lead to a rise of 4 per cent in the import volume, while as from July the balance of payments will have to support the burden of deferred instalment payments on ships for which loans had been raised abroad. The revised Swedish national budget foresees a rise of some 3 per cent in the volume of imports, affecting particularly transport equipment and petroleum.

On the assumption of no major rise in imports, it is officially expected that the United Kingdom will achieve a small surplus on current account in the twelve months ending June 1957, as already achieved in the second half of 1956. The development of the trade balance and the underlying trend of the

<sup>39</sup> See Section 2.

<sup>40</sup> It is estimated that wage increases and additions to pensions will raise disposable incomes in the second quarter of 1957 by at least DM 3 billion above the first quarter's level as against the increase of DM 1.5 billion in the corresponding period of 1956. (See *Monthly Report of the Bank deutscher Länder*, March 1957.)

TABLE 10  
Gold and foreign exchange reserves of western European countries  
(gross holdings of central banks and treasuries)

Millions of dollars, end of month

Country	1955 December	1956				1957 March
		March	June	September	December	
Austria . . . . .	361	349	361	407	406	403
Belgium-Luxembourg . . . . .	1 146	1 192	1 210	1 244	1 177	1 081
Denmark . . . . .	133	142	134	128	131	124
Finland . . . . .	219	204	168	179	174	140
France . . . . .	2 076	1 969	1 786	1 655	1 356	1 249
Western Germany . . . . .	3 076	3 214	3 590	3 999	4 291	4 487
Greece . . . . .	208	218	219	202	205 <sup>a</sup>	..
Iceland . . . . .	14	14	12	12	14	..
Ireland . . . . .	243	228	226	225	234	239
Italy . . . . .	1 237	1 241	1 288	1 358	1 308	..
Netherlands . . . . .	1 289	1 296	1 224	1 143	1 077	1 046
Norway . . . . .	165	161	162	165	179	187
Portugal . . . . .	671	676	672	670	690	..
Spain <sup>b</sup> . . . . .	151	145	135	114	89	84 <sup>c</sup>
Sweden . . . . .	470	454	435	448	473	476
Switzerland . . . . .	1 855	1 850	1 811	1 862	1 907	1 818
Turkey . . . . .	211	218	211	224	230	230 <sup>c</sup>
United Kingdom <sup>d</sup> . . . . .	2 120	2 277	2 385	2 328	2 133	2 320 <sup>e</sup>
Total gold and U.S. dollars as reported by the United States . .	13 380	13 798	13 846	14 207	14 109	13 993 <sup>c</sup>

Sources: International Financial Statistics, International Monetary Fund, General Statistics, OEEC Bulletins; banks.

<sup>a</sup> November.

<sup>b</sup> Gold and U.S. dollars reported by the United States.

<sup>c</sup> February.

<sup>d</sup> Gold and U.S. and Canadian dollars.

<sup>e</sup> April. Includes \$104 million interest waived on the U.S. and Canadian loans, added to the reserves in April after being temporarily in a suspense account.

change in the gold and dollar reserves in recent months suggest that this expectation will probably be realized. If due allowance is made, however, for seasonal factors—the first half of the year usually sees a swelling of the reserves due to the contribution of the rest of the sterling area—there is as yet little evidence of any fundamental improvement in the exchange position of the United Kingdom. In the last resort, and in the absence of structural adjustments which would help to increase exports more than in the past, the stability of the balance of payments will continue in the United Kingdom, as in Norway, Sweden and Denmark—to mention only the outstanding examples—to depend on restraint of internal demand.

Switzerland is probably the only western European country where a renewed deficit on the current balance of payments can be expected in 1957 as a result of the high level of economic activity and where, none the less, the situation does not require a limitation of imports.

On the side of exports the outlook for western Europe is not unfavourable, though it may be doubted

whether the achievements of 1956 can be fully repeated. As is evident from Table 6, official expectations in all five countries for which quantitative estimates are made point to a slower rate of increase than in the past year, and a similar result seems likely in Austria if the pull of the home market should resume its competition with exports. France is in an exceptional position, in so far as exports were handicapped last year not only by buoyant home demand, but also by a particularly poor harvest, so that some contribution to an improvement of the balance of payments can be expected from the side of exports in the present year.

United Kingdom exports in recent months have continued at a high level, particularly in dollar markets, and should benefit from the relaxation of restrictions in Australia and South Africa. On the other hand, as pointed out in a recent official study,<sup>41</sup> the share of British exports in world trade is still declining. In the first nine months of 1956 British exports of manufactures rose by 11 per cent as

<sup>41</sup> Board of Trade Journal, 30 March 1957.

compared with the same period of 1955, while world trade rose by 15 per cent.

### *Conclusion*

The limitations imposed on domestic demand which are now a feature common to practically all western European countries will almost certainly mean that the rapid rate of expansion achieved in the years 1954 and 1955 will not be reverted to in 1957 and that output will expand at what may well be considered the more normal pace of 1956. In the absence of policy changes, export demand may prove to be the decisive factor in determining the rate of growth.

Whether price stability and balance-of-payments considerations are worth the cost of potential output forgone must largely be judged by whether the sacrifice involved will permit a more orderly and steady rate of economic growth in the future. Such growth can be only assured in the long run by an adequate rate of investment and, where structural adaptation is necessary, as in the United Kingdom and Denmark, by the appropriate reallocation of resources. Where investment has been maintained at a high level for a number of years, a temporary slowing down to obtain a better balance (as, for instance, in Yugoslavia) or to avoid excessive pressure of demand on resources (as in western Germany) carries with it no serious long-term implications. Where, however, investment has reached a satisfactory level only for a brief period and has subsequently been subject to restraint, there is a real risk, should investment be restrained too long, that the productive assets will not be available in sufficient amounts when the time comes for a resumption of orderly economic growth—the main justification for temporary losses of output.

It has already been pointed out that the recognition that investment should not be made the victim of stability for too long has led to the application or consideration of appropriate stimulating measures in Austria and Denmark. In Sweden and the United Kingdom, on the other hand, although the risks of stagnating investment are also acknowledged, the time is not yet considered ripe for giving investment a renewed impetus.

If countries are to be faced with the recurrent dilemma between allowing expansion, including that of investment, at the risk of price increases and balance-of-payments difficulties on the one hand, and the continuation of disinflationary policies at the risk of inadequate investment in the longer run on the other, a case might well be made for a more selective

system of restraint whereby investment essential for the development of the economy along more desirable lines (for example, in export or import-substituting industries) is given preferential treatment. Whether or not such a policy can be adopted, the argument for temporarily forgoing investment and production opportunities in the interests of a sounder basis for long-term growth loses much of its force if the necessary structural adjustments in the allocation of resources are not carried out at the same time.

A subsidiary dilemma to that posed by the major choice between growth or stability is the choice of policies designed to prevent excess consumer demand from exerting its pressure on the domestic price level or the balance of payments. Where anxiety over prices is the major concern, and the balance of payments is not an immediate problem, freedom of manoeuvre is greater and the admission of a larger supply of goods has the double effect of meeting the extra domestic demand and discouraging price increases through foreign competition. Most countries of western Europe, however, cannot afford the luxury of this solution, and are obliged to turn to ways of reducing domestic demand in the short run rather than of increasing available supplies. One method is to wipe out excess demand by raising indirect taxes and lowering or removing subsidies, and it is likely to be resorted to in present circumstances in most countries where political pressures against increases in direct taxation are very strong. While equilibrium may be temporarily reached by this method, the consequent rise in the domestic price level is likely to generate a further round of inflation, as wage-earners push their claims for compensating wage increases. The most that this policy can achieve, therefore, is stability of prices at a higher level while it may also have unfavourable balance-of-payments effects, if the further round of wage increases induces a rise in export prices and makes imports more attractive to the home consumer.

The virtual certainty that the rise in prices deliberately provoked will lead to demands for higher wages makes it likely that the solution of the problem of demand-induced inflation can be achieved only at the risk of inducing a wage-cost inflation. While an increase in savings, either voluntarily achieved—as is the hope of several countries at the moment—or enforced through fiscal policy, can make a positive contribution to the removal of excess demand and render other measures less urgent, it can do little to prevent an increase in wages being passed on to costs and prices, unless governments were prepared to bring about a substantial fall in aggregate demand at the expense of a sacrifice of the employment objective.

## 5. THE ECONOMIC PLANS FOR 1957 IN EASTERN EUROPE

In all the eastern European countries the economic plans for 1957 differ, though in varying degree, from the main targets of the long-term plans for the years 1956 to 1960 which were introduced during the course of last year and which are now under reconsideration.<sup>42</sup> In general these differences reflect the need to correct a lack of balance in the development of the economies of these countries, which has resulted from the intense and one-sided investment activity of the period 1950-1955 coupled with considerable defence expenditure, and which has recently begun to pose serious problems for the planning authorities.

These problems are of two main kinds. The first stems from the fact that the economic policies and investment pattern of past years have brought about expansions of industrial processing capacity in the countries of the region that have outstripped the growth of production of fuels and basic materials, including agricultural products, and of the exportable goods which might purchase those materials from other countries. The disproportion between the rates of expansion of over-all industrial production and fuel supplies is particularly striking and is illustrated for several countries in Table 11. A fuel crisis helped to slow down the over-all rate of growth of output last year in all countries except Bulgaria, and shortages

of raw material supplies have from time to time prevented full utilization of processing capacity in the engineering industries and in other sectors.

The second problem is that of meeting the urgent public demands for a more rapid increase in living standards which have been voiced in several countries of the region. In present circumstances the possibilities of raising labour productivity in industry and agriculture are linked with the provision of adequate incentives in the form of steadily rising living standards. Moreover, as was noted in the last SURVEY,<sup>43</sup> recent changes in wage structures—made with the object both of improving the positions of lower-paid workers and of increasing labour incentives—can be more easily effected within the framework of a rising total of workers' incomes. The response of governments to these pressures last year has brought about a rise in consumers' disposable incomes in several countries which is at present threatening to outstrip the growth of supplies of consumers' goods.

In the more highly developed economies of Czechoslovakia and eastern Germany, the correction of the effects of the existing disproportions in the pattern of output might be expected to prove easier than elsewhere in eastern Europe, since their possibilities of using foreign trade as a correcting factor are greater. In both countries exports can be made available relatively more easily than in other countries of the area, since they compete less directly with

<sup>42</sup> The long-term plans as originally envisaged, which were produced by all the eastern European countries except Bulgaria, are discussed in the *Economic Survey of Europe in 1956*, Chapter II. Although revised plans have not yet been published, the new plans for 1957 give some indication of the likely tendency of any revisions now being made.

<sup>43</sup> *Economic Survey of Europe in 1956*, Chapter I, Section 6.

TABLE 11  
Gross industrial production and output of basic commodities in four countries

Index numbers

	Czechoslovakia			Eastern Germany			Poland			Hungary		
	1956 1950 = 100	1957 Plan 1950 = 100	1956 = 100	1956 1950 = 100	1957 Plan 1950 = 100	1956 = 100	1956 1950 = 100	1957 Plan 1950 = 100	1956 = 100	1956 <sup>a</sup> 1950 = 100	1957 Plan 1950 = 100	1956 = 100
Gross industrial production	186	200	108	203	215	106	240	249	104	210	..	..
Electric power . . . . .	178	194	109	160	171	107	207	228	110	194	..	..
Coal <sup>b</sup> . . . . .	152	161	106	149	156	105	122	119	98	182	155	85
Pig iron . . . . .	168	185	110	467	..	..	229	244	107	196	171	87
Crude steel . . . . .	156	166	106	274	..	..	199	213	107	163	126	77
Crude oil . . . . .	..	..	..	—	—	—	..	..	..	279	119	43

Sources: Plan documents and plan fulfilment reports, statistical year-books and bulletins, *Deset let rozvoje národního hospodářství a kultury Československé Republiky 1945-1955*, p. 14; *Statistické Zprávy*, No. 1, 1956 and No. 1, 1957; and *Economic Survey of Europe in 1955*, Appendix Table XXXV.

<sup>a</sup> First nine months of 1956 (annual rate).

<sup>b</sup> Hard coal and brown coal added ton for ton.

consumption or with supplies of materials to domestic industries.

As a result of the difficulties encountered, and of the effects of the revision of economic policies in Poland and the fighting and its aftermath in Hungary, which reflect—through their foreign trade—on the economies of other countries, the long-term plans of all the eastern European countries are now under reconsideration. This seems to have affected also the elaboration of the annual plans for 1957. The information on these plans available so far is scanty, and even as late as April many industries still did not know their economic targets for the year. Nevertheless, the plans and budgets as so far announced throw some light on the main trends of development. These may be summarized as a stabilization or slight slowing down of the rate of industrial expansion in Czechoslovakia and eastern Germany and a marked fall in the rate of increase elsewhere, combined with a tendency—more or less pronounced in all countries—to reduce the share of the national product going to accumulation, to maintain or raise consumption levels, to concentrate special efforts on improving supplies of fuels and basic materials (in part by developing exports with which they can be purchased) and to change the pattern of investment in the directions which would further those last two objectives.

#### *The Industrial Expansion*

The slowing down of the growth of industrial output was a feature of developments last year in every eastern European country except Bulgaria. In Hungary, output for the year as a whole fell below the 1955 level, mainly as a result of the losses in the last quarter, and the planned level of output in 1957 is influenced by the special problems of recovery from the damage sustained by the economy at the time.<sup>44</sup> Among the other countries, however, a marked contrast has appeared between the plans for industrial expansion in 1957 of Czechoslovakia and eastern Germany on the one hand and those of Poland, Rumania and Bulgaria on the other (see Table 12).

In the first two countries it is apparently expected that existing disproportions in the development of different sectors of the economy can be corrected—or at least diminished—while sustaining last year's rate of industrial expansion. But in Poland, Rumania and Bulgaria the rate of increase in industrial output planned for 1957 is one-half or less of that achieved in 1956, and in Poland and Rumania it is also one-half

or less of the rate of growth foreseen in the original long-term plans. Since industrial production indices in these countries are calculated on the basis of gross output rather than "value added", any shift in the pattern of activity towards raw material production and early stages of processing would tend to lower the over-all production index. The actual decline in the rate of growth provided for in these countries' plans may therefore be exaggerated by the figures in Table 12. It is, however, clear that a significant slackening of the pace of expansion is expected.

However, to the extent to which this year can be regarded as a year of re-deployment of resources in these countries—at the expense of a temporary sacrifice of some of the possibilities of over-all expansion—it may well be followed by a recovery of the over-all rate of growth next year. In particular the efforts now being made to increase supplies of raw materials and fuels, while the rate of growth of output of final products is reduced, should tend to raise stocks and assist a smoother supply of materials to industrial enterprises in future.<sup>45</sup>

To raise production of coal and electric power substantially is now a major object of policy in all countries, and some of the results expected in 1957 are illustrated by the figures in Table 11.

The planned reduction in output in Poland in 1957 as compared with the level achieved in 1956 is at first sight surprising, but is entirely due to the abolition of obligatory holiday work:

Output of hard coal in Poland  
Millions of tons

	Total	Output on working days	Output on Sundays and holidays	Holidays worked
1954 . . . .	91.6	85.7	6.1	34
1955 . . . .	94.5	87.8	6.7	26
1956 . . . .	95.1	88.7	6.5	24
1957 (Plan) .	93.0	90.0	3.0 <sup>a</sup>	12

Sources : *Gospodarka Węgrem*, No. 3, 1957; *Trybuna Ludu*, 6 April 1957.

<sup>a</sup> This output will result from voluntary work paid above the normal tariffs.

The steadily rising output in normal working time and recent increases in labour productivity—the first for many years—are, however, hopeful signs for the future. Moreover, the inflow of new labour to the

<sup>44</sup> Recent economic developments in Hungary are the subject of a special note in this *Bulletin*, and references in this review will therefore be kept to a minimum.

<sup>45</sup> In Poland, for example, the Ministry of Engineering plans the value of production at 106.3 (1956 = 100), but will receive 11.2 per cent more rolled products and, within this total, 15.6 per cent more special steel. The Ministry of Coal Mining plans a slight decrease in total output, but will receive 25.5 per cent more rolled products, 28 per cent more cement, and 16.6 per cent more sawnwood. Total imports of raw materials for heavy industry will increase by 22 per cent and for light industry by 24 per cent above the level of 1956. (*Trybuna Ludu*, 10 March 1957.)

TABLE 12

Some economic indices in eastern European countries

	Accumulation	Volume of state investment	Industrial production	Output of means of production	Volume of retail trade turnover
	Percentage of national income	Percentage increase over previous year or annual rate of growth			
<b>Czechoslovakia</b>					
1956 original Plan . .	22 *	21	9	10	5 <sup>a</sup>
1956 Actual . . . . .	20 *	11	9½	11½	9
1956-60 original Plan .	22	15	8½	9	8 <sup>b</sup>
1957 Plan . . . . .	18 *	13	8	8	9 <sup>c</sup>
<b>Eastern Germany</b>					
1956 Plan . . . . .	16 *	40	9	..	5
1956 Actual . . . . .	16	34	6	6	4
1956-60 original Plan .	18	18	9	10	7
1957 Plan . . . . .	17 *	7 <sup>d</sup>	6	6½	6
<b>Poland</b>					
1956 Plan . . . . .	22	8	7	7	9
1956 Actual . . . . .	20½	0	10	9	15
1956-60 original Plan .	22 * <sup>e</sup>	8	8½	8½	8½
1957 Plan . . . . .	19	0 <sup>f</sup>	4	4	16½
<b>Rumania</b>					
1956 Plan . . . . .	25 *	21	..	..	..
1956 Actual . . . . .	..	15	11	14	4
1956-60 original Plan .	25	13	10-10½	11 -11½	10
1957 Plan . . . . .	15	-14	4	5½	13 <sup>g</sup>
<b>Bulgaria</b>					
1956 Plan . . . . .	20	-14	12	10	..
1956 Actual . . . . .	..	-17	16	12	15
1957 Plan . . . . .	18	-17	8	10	9
<b>Hungary</b>					
1956 Plan . . . . .	20	14 <sup>h</sup>	6	10	4
1956 Actual . . . . .	8	-24 <sup>h</sup>	-9	-8	10
1957 Plan . . . . .	4	-4 <sup>h</sup>	2	-4	..

Sources: Plans, Plan Fulfilment Reports and budget speeches; direct communication by governments; *Economic Survey of Europe in 1956*, Chapter I, Tables 11, 14, 16 and 18; Chapter II, Tables 1 and 3; *Planovo Stopanstvo*, No. 1, 1957.

<sup>a</sup> Increase at current prices. At constant prices the rise must have been greater.

<sup>b</sup> Increase in personal consumption at constant prices. Per capita real incomes of workers outside agriculture were expected to rise at an annual rate of 3½ per cent and real incomes in agriculture at an annual rate of 4 per cent. The difference between these figures and the planned rate of growth of total personal consumption is difficult to explain and seems too large to be accounted for by the expected rise in the working population.

<sup>c</sup> The planned rise in value of retail turnover is 4½ per cent.

<sup>d</sup> "Total investment activity", including repairs and replacement of capital equipment and buildings, should increase by 14 per cent.

<sup>e</sup> The share of net investment in national income was planned as 17-18½ per cent.

<sup>f</sup> Total investment should increase by 6 per cent, of which investment in agriculture by 18 per cent.

<sup>g</sup> This appears to represent the expected rise in the total value of retail sales, probably including some allowance for price increases.

<sup>h</sup> Total investment.

mines is proceeding at a satisfactory rate—though there is at present a shortage of labour in the industry—since the decision to raise miners' incomes taken at the beginning of the year. The ban on prolongation of working time beyond prescribed limits and the reduction in normal overtime working should tend to reduce production costs.

Coal production in Poland slightly exceeded the planned level in the first quarter of this year, though it was below the rate of the first quarter of 1956, and in Czechoslovakia, eastern Germany and Hungary also the first quarter's targets were exceeded. In Hungary, as was to be expected, output was well below last year's level.

	Output of coal Millions of tons			
	1st qtr. 1956	1st qtr. 1957		1st qtr. 1957 (1st qtr. 1956=100)
		Plan	Actual	
<b>Poland</b>				
Hard coal . . .	24.1	23.1	23.5	98
<b>Eastern Germany</b>				
Hard coal . . .	0.7	0.7	0.7	100 *
Brown coal . . .	50.0	52.1	53.4	107
<b>Czechoslovakia</b>				
Hard coal . . .	6.08	6.05	6.12	101
Brown coal . . .	10.63	11.48	11.99	113
<b>Hungary</b>				
Brown coal . . .	6.15	4.00	4.38	71

Sources : Horník, 18 April 1957; *Statistické Zprávy*, No. 1, 1957; *Statistický Obzor*, No. 4, 1957, p. 180; *Statistikai Negyedévi Közlemények*, 1956, No. 1-2; *Statistikai Szemle*, No. 11-12, 1956; *Népkarat*, 4 April 1957; *Biuletyn Statystyczny*, No. 1, 1957; *Trybuna Ludu*, 2 April 1957; and direct communication from the Polish Government.

Both in eastern Germany and in Czechoslovakia costs of coal production have been rising. In the latter country, resort to emergency holiday shifts contributed to the rise in output, though the improvement in the labour supply was more important.

Outside the fuel sector, data on production in the first quarter of the year are fragmentary. However, it is clear that, thanks partly to the mild weather, fuel shortage has not been as serious a hindrance as was earlier feared.

In Poland, total industrial output in socialized industry was 10 per cent above the corresponding 1956 level and 7 per cent greater than was laid down in the plan.<sup>46</sup> In eastern Germany, over-all output showed much less than the normal seasonal decline, and was 10 per cent above the level of the first quarter of 1956; in Czechoslovakia, total industrial output was 2 per cent above the planned level and 9 per cent higher than in the first quarter of 1956. Despite this apparently satisfactory result, much criticism has recently been expressed in Czechoslovakia on the failure to reach the planned levels of output in certain key sectors (e.g., electric power, pig iron and steel) where any prolonged lagging behind the plan must threaten the achievement of other targets also. The failure of productivity to rise in step with recent wage increases has also been noted with some distress, as has the recent rise in absenteeism to 10.3 per cent in the first two months of this year, as compared with 9.5 per cent a year ago—possibly attributable, at least in part, to the recent easing of some of the rules governing eligibility for, and rates of, social insurance benefits.

<sup>46</sup> Only electric power production developed unfavourably, the output being 70 million kWh less than foreseen by the plan. It was therefore necessary to cut supplies of electric current by 58 million kWh, and these cuts mainly affected the largest power consumers such as carbide ovens and metallurgical aluminium plants. It is now expected that the over-all industrial production plan for the year will be exceeded.

## Investment

The rate of growth of investment activity foreseen for 1957 is, in all countries, below the average rate provided for in the original long-term plans (see Table 12). The change from the original plans is least in Czechoslovakia, where the rate of increase remains relatively high. However, here too a change in policy has taken place, since the version of the 1957 plan discussed in September 1956 foresaw a rise of 23 per cent over the 1956 level. The distribution of investment in Czechoslovakia is also characteristic. The main effort is being directed towards the completion of previously started projects, and new works are concentrated on a strictly limited number of projects. Within industry, investment funds will be directed

TABLE 13  
Some elements in the investment programmes  
of Czechoslovakia, eastern Germany and Bulgaria

	1956 Actual	1957 Plan	Index 1957 Plan (1956=100)
<b>Czechoslovakia</b>			
(Billions of Kčs. at 1955 budget prices)			
Total state fixed investment . . .	22.03	24.89	113
of which :			
Industry . . . . .	12.34	..	..
Transport . . . . .	2.64	3.25	123
Housing . . . . .	3.79	4.83	128
Agriculture, forestry and other . . .	2.09	2.41	115
Investment in co-operative farms . . . . .	2.40	2.94	124
<b>Eastern Germany</b>			
(Billions of current DM)			
State investment . . . . .	6.3	6.8	107
of which :			
Coal and power . . . . .	..	1.8	200-250 *
Other . . . . .	2.9	3.6	124
Total investment <sup>a</sup> . . . . .	9.2	10.4	114
of which :			
Housing <sup>b</sup> . . . . .	1.2	2.0	162
<b>Bulgaria</b>			
(Millions of current leva)			
Total state fixed investment . . .	4 345	3 595	83
of which :			
Industry . . . . .	2 320	2 229	96
Agriculture . . . . .	686	377	55
Transport and communications . . .	435	370	85
Construction . . . . .	708	467	66
Other . . . . .	196	152	78

Sources : *Rudé Právo*, 12 February, 3 March and 18 April 1957; *Statistické Zprávy*, No. 1, 1957; *Die Wirtschaft*, 2 May 1957; Bulgarian Plan for 1957, *Planovoe Stopanstvo*, No. 1, 1957.

<sup>a</sup> "Total investment activity", including private investment and all repairs and replacements.

<sup>b</sup> Of the DM 0.8 billion increase from 1956 to 1957, DM 0.5 billion is new construction and DM 0.3 billion repairs.

especially to the development of capacity for output of basic products, such as fuels, chemicals and building materials. Transport is also to be given preferential treatment, together with agriculture, where there is particular stress on investment in the socialized sector; and housing construction also is intended to increase relatively quickly (see Table 13).

The favourable treatment of housing as compared with other sectors is also a feature of the plans of eastern Germany, as is shown in Table 13.<sup>47</sup> In Albania also, the housing sector is to receive some preference in 1957, with the area of dwelling space built by the State rising from 65,800 sq.m. in 1956 to 100,000 sq.m. in 1957, and with extra credits being granted for private and co-operative house-building. In Poland, state investment in housing is planned to rise by about 16 per cent, and private house-building is also expected to increase, while in Hungary housing appears to be one exception to the general rule of a lower rate of investment this year than last.

The fall in the rate of growth of state investment in eastern Germany in 1957 is very marked (see Table 12). This country—perhaps more dependent on imports of raw materials than any other in eastern Europe—constantly faces the choice between the claims of the home economy and the export market for investment goods.<sup>48</sup> The severe difficulties experienced at the end of 1956 in securing adequate supplies of raw materials and energy induced the Government to give priority to exports over home investment. In 1957 imports and exports are both expected to rise by 25 per cent over the 1956 level, as compared with increases of 14 per cent and 10 per cent respectively in the previous year, while state investment is to increase by 7 per cent (14 per cent if repairs and replacement are included) as against last year's rise of 34 per cent.

<sup>47</sup> The number of dwellings constructed is expected to rise from 30,000 in 1956 to 55,000 in 1957.

<sup>48</sup> The situation was described as follows by Mr. A. Rau, Minister of Foreign Trade:

"Especially in engineering, there is frequently a conception according to which, if possible, all the machines and equipment produced by us should be invested in the country. . . . Naturally it would be desirable to renew within one or two years the greatest part of the plant equipment. If we did so we would unavoidably provoke a situation where our workers would stand without raw materials at the new machines condemned to idleness. . . . Investment can be earmarked from our total production only after covering export requirements corresponding to our imports. A correct proportion has to exist between all these. This proportion cannot be changed arbitrarily in favour of investment activity. The increase of investments by 32 per cent surpassed already the economically permissible rhythm . . . and mortgaged the prospects for 1957 as reflected in our present difficulties." (*Neues Deutschland*, 20 February 1957.)

However, estimates of home investment do not represent the total of eastern Germany's investment effort. Recent agreements between eastern Germany and other countries of the area provide for eastern Germany to invest abroad in the development of fuel and other materials and to receive in exchange the resulting output. An important agreement of this kind was signed on 17 April 1957 with Poland. Eastern Germany will undertake the complete investment, including prospecting, blueprints and equipment, for five open-cast brown-coal mines of a total capacity of 35 million tons per year.<sup>49</sup> Poland will supply the necessary quantity of steel and rolled products, and repayments of investment credits will be made by deliveries of coal and coke. These will start six years after the delivery of each part of the equipment.

Within the limits of the reduced rate of growth of domestic investment the preference given to housing in eastern Germany has already been mentioned. Coal and electric power are other sectors given a special preference, not only in the Plan for 1957, but also by means of an arrangement allowing those responsible for carrying out the investment plan for the years up to 1960 to place firm orders for equipment, building work, etc., for the whole period without waiting for the drawing up of the annual plans. The work on the "Schwarze Pumpe" integrated coal works is to be continued, with the main effort concentrated on the briquetting plant, which is scheduled to be ready first—a policy of concentrating on relatively quick returns which is a characteristic of the investment plans for 1957 as a whole.<sup>50</sup>

In Poland total state investment outlays in 1957 are planned to remain at the 1955 level for the second consecutive year. It is already envisaged that state investment originally planned for the last two years of the five-year plan (in 1959 and 1960) will be considerably cut, and that the increase expected in private investment in agriculture and housing will not make

<sup>49</sup> Two mines will be constructed on the Polish-German frontier in Turow and three in the Konin region in Central Poland. (*Trybuna Ludu*, 18 April 1957.)

<sup>50</sup> The execution of the existing plans meets with considerable difficulties, as may be judged from the following statement made by the Prime Minister, referring to earlier expectations and the new forecasts of the results to be achieved: "All the calculations of the Ministry of Coal and Energy were based on the construction of the Schwarze Pumpe which would supply in 1956 36 million tons of coal, 6 million tons of briquettes and 3.2 billion cubic metres of gas. . . . Although absorbing half of all investments in coal mining during the second Five-year Plan, the Schwarze Pumpe would by 1960 supply only 2 million tons of briquettes and the present organization of the building work on this project makes the attainment of this target very doubtful. It is quite clear that our whole plan must be radically changed." (*Die Wirtschaft*, 7 February 1957.)

good this cut.<sup>51</sup> The reduction in state investment plans affects mainly the metallurgical and engineering industries. Investment in coal, electric power, building materials, chemicals and some light industries for which raw materials should be available is to increase, both in 1957 and in later years, and investment in agriculture, housing and the social welfare sector is also planned to increase this year. As noted in Table 12, total investment (state and private) in Poland is expected to rise by 6 per cent in 1957, and investment in agriculture alone by 18 per cent.

Bulgaria and Rumania are the only countries other than Hungary to plan an actual fall in investment this year below the 1956 levels (see Table 12). It seems that the allocation of investment resources follows the pattern applied in other countries—namely, strong concentration on a limited number of investment projects with new projects restricted so far as possible to those sectors where increases in output are judged to be most urgent and for which raw materials can readily be made available. The cuts in state investment in Bulgaria as shown in Table 13 seem to be spread fairly evenly over the major sectors; but state investment in agriculture as shown there will be supplemented by credits of 300 million leva to co-operative farms (over 20 per cent more than last year), and housing credits additional to the sums included under "construction" in the table will amount to 200 million leva (about twice as much as in 1956).

#### Foreign Trade

It seems that the interdependence between investment activity at home and foreign trade is more vividly felt in all eastern European countries in 1957 than in other years. After years of a high rate of over-all economic expansion not accompanied by an adequate increase in exports or invisible incomes from abroad, balance-of-payments problems have now become acute for most of these countries. Difficulties in securing imports are the more serious because of the heavy dependence of each individual country on supplies of raw materials and equipment from abroad, and the relatively small degree of economic integration among themselves.

As has already been mentioned, the plans for 1957 foresee a renewed effort in all countries to increase exports. The main hope, at least for Czechoslovakia, eastern Germany and Poland, lies in exports of

engineering products. There are at least three main reasons for this. First, there is scope for changes in production patterns in all countries, which can fairly easily make metal goods available for export rather than for the home market. Secondly, there are everywhere some idle capacities in engineering plants, increased in recent months by reduction in defence production. Finally, there are fair possibilities of finding markets for engineering products, not so much in the eastern European countries, which all aim at certain relaxations in investment activity, but in the Soviet Union, which seems ready to accept in 1957 more imports of machinery and equipment in exchange for higher exports of raw materials. Exports of engineering products to overseas countries remain as another possibility, though the immediate benefit to the balance of payments may be greatly reduced by the need to offer credit to overseas buyers.

The figures in Table 14 provide a striking illustration of the efforts now being made to increase exports of these goods in four countries; and in Czechoslovakia, eastern Germany and Poland the figures seem to imply at least a virtual stabilization, or even a fall, of deliveries to the home market. In Hungary also, although exports in general are likely to be much reduced, it seems probable that engineering products will provide the greater part of a total which may be no more than one-half of last year's level.

TABLE 14  
Index numbers of engineering production and exports  
in four countries  
Preceding year = 100

	1955	1956	1957 Plan
<i>Czechoslovakia</i>			
Production . . . . .	110	116 <sup>a</sup>	111
Exports . . . . .	132	109	132
<i>Eastern Germany</i>			
Production . . . . .	108	109	108
Exports . . . . .	97	104	130-135
<i>Poland</i>			
Production . . . . .	112	112 *	106
Exports . . . . .	125	112	132
<i>Rumania</i>			
Production . . . . .	..	110	..
Exports . . . . .	..	..	170

Sources: Plans and plan fulfilment reports; *Statistické Zprávy*, No. 1, 1956 and No. 1, 1957; *Czechoslovak Economic Bulletin*, March 1956; *Bulletin d'information de la Chambre de Commerce de la RPR*, April 1957.

<sup>a</sup> Planned figure: actual output was below the planned targets.

<sup>51</sup> State investment will be cut by 36 milliard zloty—i.e., roughly one-third—while private investment would increase by about 20 milliard zloty, leaving a net decrease of 16 milliard zloty or about one-fifth of the total investment originally planned for these two years.

Scarcity of raw materials for the engineering industries has, however, directed attention in several countries to the question of the desirable pattern of engineering production and exports, and there seems to be a tendency to concentrate more on those products where the value added in processing is greatest. This involves, in some cases, marked changes from the lines of specialization agreed upon during last year's negotiations on the co-ordination of plans in this field.<sup>52</sup> For example, these agreements provided for eastern Germany substantially to expand its output of such products as ships, rolling-mills and cement factories, where the material content in relation to that of labour employed in their manufacture is very high.<sup>53</sup> But the 1957 Plan states explicitly: "The available material should be used before all for the expansion of the output of machine tools, textile and printing machines, motor vehicles, precision instruments and optics, tools and implements, radio and television equipment. . . The consumption of rolled steel per million DM of production should decrease." Similar views have been expressed in Czechoslovakia<sup>54</sup> and in Hungary.

A significant reconversion of the existing pattern of engineering production in these countries would be neither an easy nor a rapid process. An important factor would be the degree of help given by the Soviet Union. If the U.S.S.R. were willing to open more widely its market for specialized products of relatively small metal content and itself to concentrate more on output of metal-intensive goods, re-conversion in other countries could be considerably accelerated.<sup>55</sup>

Only Poland and Bulgaria have so far produced detailed foreign trade plans for 1957 (see Table 15).<sup>56</sup>

<sup>52</sup> As was pointed out in the SURVEY for 1956 (Chapter II, pp. 18 and 19), these agreements do not seem to have been based on any cost comparisons which might have provided a guide to the appropriate lines, and degrees of specialization in each country; neither is there any indication that such considerations have influenced the changes now being made in plans in this field.

<sup>53</sup> The Second Five-year Plan provided for a fourfold increase in the output of cement plant equipment. It was stated elsewhere that this type of production absorbed 340 tons of rolled steel per 1 million DM of output, while the Ministry of Heavy Engineering as a whole consumed only 160 tons for the same value of output.

<sup>54</sup> In Czechoslovakia the problem is aggravated by the fact that machinery and equipment are unduly heavy in comparison with international standards. According to a special study published in *Strojrenstvi*, No. 4, 1957, comparable items of machinery weigh, on the average, 15 per cent more in Czechoslovakia than in foreign countries, and in some cases the difference reaches 30 per cent. (*Rudé Právo*, 6 March 1957.)

<sup>55</sup> The agenda of the last meeting of the Engineering Committee of the Council for Mutual Economic Co-operation, which was held in Prague on 10-15 April 1957, provided for discussion of some of these questions. (*Rudé Právo*, 16 April 1957.)

<sup>56</sup> The special situation of Hungary is discussed in the separate note in this *Bulletin*.

In Poland the small improvement in the balance of visible trade in 1956 is expected to give place this year to a trade deficit of over \$200 million, despite the most stringent efforts now being made to expand exports and a scrutiny of the import programme intended to eliminate all but vital purchases. A major factor in this development is the increase in the income of the population granted at the end of 1956, which in the view of the Polish Government must be maintained, and which necessitates additional net imports of manufactured consumers' goods and of food totalling about \$116 million. Another factor is a sharp increase in imports of raw materials and fuels combined with a fall in exports, giving a net adverse change in the balance of trade in these goods of about \$190 million. It is interesting to note, in contrast, the unchanged level of imports of capital goods combined with a 30 per cent rise in exports in this category.

Inadequate levels of investment in the past, combined with a current manpower shortage—which it is hoped will be temporary—and rising home demand have made a cut in Polish coal exports inescapable this year. This emergency decision was particularly hard to take in view of the good world market prices now prevailing.

#### Planned output and distribution of hard coal in Poland in 1957

	Thousands of tons	Index (1956 = 100)
Planned output . . . . .	93 000	97.7
1. Industrial consumption . . . . .	63 100	103.6
of which :		
Coke . . . . .	12 770	..
Electric power . . . . .	16 316	..
Railway transport . . . . .	9 850	..
Own consumption of coal		
mines . . . . .	3 064	..
Building materials . . . . .	2 695	..
Sugar . . . . .	605	..
Cellulose and paper . . . . .	859	..
2. Heating of public premises (administrative, schools, hospitals, etc.)	2 400	101.5
3. Market sales . . . . .	13 900	108.2
of which :		
Sales to population . . . . .	7 700	..
Wages in kind . . . . .	6 200	..
4. Exports, including bunkers for Polish ships . . . . .	13 200	68.0

Source : *Trybuna Ludu*, 6 April 1957.

Export of other important items—namely, cement,<sup>57</sup> timber, textiles and sugar—is also to be considerably

#### <sup>57</sup> Production and Distribution of Cement in Poland

	Thousands of tons		Index (1956 = 100)
	1956	1957	
Production . . . . .	4 035	4 403	109
Home consumption . . . . .	3 645	4 228	116
of which :			
Market sales . . . . .	656	1 030	157
Export . . . . .	534	160	30
Changes in stocks . . . . .	-144	+15	..

Sources : *Trybuna Ludu*, 9 April 1957.

TABLE 15  
Foreign trade of Bulgaria and Poland  
Millions of current U.S. dollars

	BULGARIA				POLAND			
	1955	1956	1957 Plan	1957 (1956 = 100)	1955	1956	1957 Plan	1957 (1956 = 100)
<i>Imports</i>								
Total . . . . .	195	224	273	122	932	912	1 140	125
Capital goods . . . . .	79	81	70	86	288	230	227	99
Fuels, raw materials and semi-manufactures . . . . .	87	..	182	..	482	497	610	123 <i>a</i>
Manufactured consumer goods . . . . .	29	..	21	..	40	59	120	202
Food . . . . .					122	127	183	145
<i>Exports</i>								
Total . . . . .	220	286	341	119	914	965	932	97
Capital goods . . . . .	7	12	27	225	111	134	176 <i>b</i>	131
Raw materials and semi-manufactures . . . . .	66	128	120	94	593	628	553	88
Manufactured consumer goods . . . . .	39	52	97	187	67	88	66	75
Food . . . . .	117	94	97	103	143	115	137	119
Trade surplus (+) or deficit (−) . . . . .	+34	+62	+68		−8	+53	−208	

Sources: Direct communication from the Bulgarian Government; *Vnesna Trgovia* No. 2, 1957; *Życie Warszawy*, 19 February and 19 April 1957; *Polish Statistical Yearbook* 1956, p. 248; *Polish Statistical Bulletin*, February 1957; *Trybuna Ludu*, 18 February 1957; *Nowe Drogi*, April 1957.

<sup>a</sup> Import of some raw materials will increase as follows (index numbers 1956 = 100): crude oil 118 (of which from the U.S.S.R. 135), iron ore 122

(of which from the U.S.S.R. 116), rolled products 132, rubber 142, tin from the U.S.S.R. 335.

<sup>b</sup> The main items of this export trade are planned as follows (in percentage of total engineering exports): railway rolling stock and ships 61, motor-cars and building equipment 20, machines and tools 4, complete industrial plants 4.

reduced, largely as a result of rapidly rising home consumption.

Roughly half the trade deficit will be covered by Polish invisible earnings—mainly on transit of goods through Polish territory—and the other half is expected to be covered by credits. At the beginning of the year, agreement was reached on an interest-free swing credit of 25 million U.S. dollars from the Soviet Union.<sup>58</sup> Czechoslovakia has granted to Poland a long-term investment credit of about \$27 million, first instalments of which may be drawn upon during the year. There are also hopes of a successful conclusion to credit negotiations with the United States which are in progress at the time of writing, and a small bankers' credit will be available for use in the United Kingdom. Finally, some help not taken into account in the figures in Table 15 may come from improved terms of trade. In fact, Poland hopes to receive better prices this year for some of her products.<sup>59</sup>

<sup>58</sup> *Życie Warszawy*, 17 April 1957.

<sup>59</sup> The Polish Minister of Foreign Trade, Mr. W. Trąpczyński, stated in this connexion: "For the first time in our trade with the socialist countries, the world market price will be fully applied, similarly to trade with the western countries. In some consideration we will gain, in some we will lose, but on the whole

Plans for Bulgaria's trade in 1957 show trends similar to those in Poland. If the plan for 1957 is compared with the actual results in 1955 a marked slackening in imports of investment goods and a conspicuous increase in imports of raw materials and semi-manufactured products is apparent. With better supplies of imported raw materials, it is hoped to increase exports of manufactured consumers' goods in 1957 to almost double the level of the previous year.<sup>60</sup> Exports of machinery and equipment will be more than doubled but will still be only 8 per cent of all exports.

During recent years Bulgaria has developed production of some raw materials, such as ferrous and non-ferrous ores and concentrates, which were mainly destined for export as domestic processing capacity was not sufficient to absorb all production. In 1956, exports of such raw materials were almost double the

it is favourable for us, if not for other reason than better evaluation of efficiency of our foreign trade." (*Życie Warszawy*, 19 April 1957. See also *Economic Bulletin for Europe*, Vol. 8, No. 2, pp. 53 and 54.)

<sup>60</sup> An agreement was concluded with the U.S.S.R. on the basis of which the Soviet Union will send to Bulgaria industrial raw materials for production of consumers' goods and other products which will then be exported to the U.S.S.R.

volume of the previous year; but, in 1957, raw materials exports show a slight drop, presumably as a result of an expected rise in domestic processing and stock building.

As already mentioned, the foreign trade plan for 1957 in eastern Germany allows for equal increases of 25 per cent in imports and exports in 1957 and relies upon credits to avoid a balance-of-payments deficit. In accordance with trends elsewhere, imports of most raw materials and foods are to show a greater than average rise, as the following figures indicate.

**Indices of planned imports of raw materials  
in eastern Germany in 1957**

1956 = 100

Rolled steel <sup>a</sup>	114
Iron ore	128
Crude oil <sup>b</sup>	120
Rubber <sup>c</sup>	170
Fuelwood	240
Timber	148
Fine wool	128
Long-fibre cotton	148
Meat	167
Grain	129

Source: *Die Wirtschaft*, 2 May 1956.

<sup>a</sup> At earlier stages only a slight increase or even a decrease in imports was contemplated.

<sup>b</sup> Fuel-oil heating will be substituted for coal-burning in several plants.

<sup>c</sup> Domestic production of buna out of brown coal will probably decrease in order to save coal.

Albania's balance of payments has also been considerably strengthened by the cancellation of all its outstanding debts to the Soviet Union (422 million roubles) and the grant of a new 31-million-rouble credit to enable the lifting of rationing next year.

The great efforts on the part of all eastern European countries to improve their balances of payments have brought to the fore in some countries the problem of payments for transport services. It has already been mentioned that Poland intends to cover almost half of its visible trade deficit with receipts from transit traffic through Polish territory. Another source of invisible earnings—namely, sea transport—offers possibilities very little exploited in the past.

During the period of the last six-year economic plan (1950-1956) Poland reconstructed and created new shipyard capacity, and the output of sea-going ships increased from 8,000 DWT in 1950 to 104,000 DWT in 1955. However, about 85 per cent of the total production in the period (400,000 DWT) was exported, and the Polish merchant navy increased hardly at all and possessed in 1955 only 331,000 DWT of shipping. The share of total Polish trade transported by Polish ships declined, and payments for transport

of goods carried in foreign ships increased rapidly.<sup>61</sup> The Polish Government has now decided to stop any further deterioration in the balance of payments on account of shipping services. Plans provide for an increase in the total merchant tonnage up to 368,000 DWT in 1957—i.e., by 11 per cent over the 1955 level—and for a doubling of the 1955 tonnage of the fleet by 1960.<sup>62</sup>

In 1955 in eastern Germany, the cost of shipping services amounted directly or indirectly to some 120 million roubles. Of this, the east German fleet, which comprised three sea-going vessels aggregating 10,500 DWT (one of these of 1,500 DWT has since been lost), is estimated to have earned about 3 million roubles. Furthermore, only 45 per cent of the sea-borne traffic comes through east German ports, the rest being transported through west German and foreign ports, involving further expenditure in foreign currency.

The Second Five-year Plan provided for a fifteen-fold expansion of the fleet (this would have implied that roughly a quarter of the tonnage produced by the shipyards would be retained in the country as against 1 or 2 per cent in 1950-1955). If the Plan were fully achieved, the east German fleet would carry about 24 per cent of the country's sea-borne traffic in 1960, as compared with about 2½ per cent in 1955. Doubts have been expressed, however, as to whether this is an economic programme, bearing in mind that the running costs of the east German fleet are among the highest in the world and that subsidies at present cover more than half of its total expenditure.<sup>63</sup>

*Personal Incomes and Consumption* <sup>64</sup>

The trend of retail sales in eastern European countries seems usually to offer a fairly good indication of the trend of aggregate personal incomes. The rise in the volume of retail sales expected in 1957—at a rate equal to or exceeding that of 1956 in most countries—is illustrated by the figures in Table 12. The very large increase expected in Poland is particularly striking.

<sup>61</sup> The rise in payments was as follows (millions of roubles):

1953	1954	1955	1957 (plan)
34	71	118	150

<sup>62</sup> Another move aiming at increasing invisible earnings or diminishing payments in foreign currencies for voyages abroad, telephone and telegraph services, etc., was the revision of the rate of exchange between the Polish zloty and currencies of western countries. This reduces the inducement which previously existed for heavy expenditure by Polish residents on these items and should reduce the obstacle constituted by the earlier rate to visits by foreign tourists to Poland and to remittances by Polish emigrants.

<sup>63</sup> See *Wirtschaftswissenschaft*, No. 5, 1956, pp. 662-685.

<sup>64</sup> For a description of the situation in Hungary, see the special note in this *Bulletin*.

TABLE 16

## Total personal income and expenditure in Poland

Thousand million zlotys at current prices

	1956	1957 (Plan)	Index 1957 (1956 = 100)
<i>Income</i>			
Wage fund . . . . .	107.3	118.0 <sup>a</sup>	110
Pensions, family allowances, stipends and other social expenditure . . .	13.2	16.1	122
Income from enterprises' funds, state prizes, bank credits for population, etc. . . . .	22.0 x	24.2	110
Income of agricultural population . .	32.1	39.7	124
Total . . . . .	174.6	198.0	113
<i>Expenditure</i>			
Services . . . . .	9.6	10.7	111
Taxes, repayments of bank credits, insurance fees, etc. . . . .	..	20.3	..
Payments for previously purchased goods, increase in saving deposits, other reserves . . . . .	..	6.9	..
Purchase of goods . . . . .	134.0	160.1	119
Total . . . . .	..	198.0	..
Increase in stocks of consumers' goods	..	1.2	..

Source: Trybuna Ludu, 30 March 1957.

<sup>a</sup> The total wage fund for 1957 is based on the assumption that the output plan will be executed 100 per cent. In case of over-fulfilment of the Plan, the wage fund would increase accordingly.

The corresponding estimates of changes in money incomes and total personal expenditure in Poland are shown in Table 16. The increases in money wages and social benefits at the end of 1956 were greater than had originally been intended,<sup>65</sup> and agricultural incomes are also expected to rise sharply as a result of higher prices, a decrease in obligatory deliveries, higher output and a reduced land tax. So far, the resulting rise in consumer demand, of which evidence is given in Table 17, seems to have been satisfied without any significant rise in prices, thanks largely to the good food deliveries from farms in the early months of this year and also to some running down of stocks of consumers' goods. But to provide for an addition to consumers' real disposable incomes in the year as a whole on the scale indicated by the figures in Table 16 will, as has already been noted, call for strenuous efforts in home production of consumers' goods and will produce a heavy import bill for food, other

<sup>65</sup> See the SURVEY for 1956, Chapter I, pp. 14 and 15.

consumers' goods and raw materials for light industries, with a need for foreign credits to cover the resulting balance of payments deficit.

In Rumania, the planned increase in the average earnings of workers by 15 per cent and the suppression of obligatory farm deliveries point to an expansion of money incomes of the same order of magnitude as in Poland, which seems to set a major task for the Rumanian economy if the growth of real incomes is to be at anything like this rate. The share of consumption in the national income as planned for 1957 in Rumania is the highest, after Hungary, of all the eastern European countries; but this may, to some extent, reflect a greater disparity between consumers' goods prices and prices of capital goods in Rumania than elsewhere.

TABLE 17

## Retail sales in Poland in the first quarters of 1956 and 1957

Commodity	Unit	First quarter 1956	First quarter 1957	Index First quarter 1957 <sup>a</sup>
Meat and meat products	Thousand tons	99.2	126.3	127
Lard . . . . .		16.5	19.2	116
Butter . . . . .		12.4	16.9	136
Eggs . . . . .	Million pieces	181.4	222.1	122
Woollen cloth . . . . .	Million metres	11.7	13.5	116
Cotton cloth . . . . .		65.5	83.8	128
Silk cloth . . . . .		13.4	16.6	125
Cement . . . . .	Thousand tons	171.4	303.0	177
Lime . . . . .		78.1	80.7	103
Brick . . . . .	Million pieces	34.0	30.0	88
Sawnwood . . . . .	Thousand m <sup>3</sup>	106.9	155.2	145
Bicycles . . . . .	Thousand pieces	69.4	90.8	131
Sewing-machines . . . .		16.7	41.4	250
Washing-machines . . . .		8.7	34.0	391

Source: Trybuna Ludu, 15 April 1957.

<sup>a</sup> First quarter 1956 = 100.

The rise in personal incomes foreseen in eastern Germany is mainly accounted for by the increase in incomes decreed by the Government during the second half of 1956; but a further rise is expected which is related to increases in production and in the productivity of labour. The increase in total personal incomes surpasses significantly the planned growth of the volume of retail trade. This suggests that, if prices are in fact to be held more or less stable in 1957, a considerable increase must be envisaged in private savings or in self-financed investments in the private sector of the economy, while higher expenditure on services may also be expected.

**Additions to consumers' purchasing power in eastern Germany from 1956 to 1957, according to the 1957 Plan**

	Millions of current DM	Percentage increase over 1956 level
Increases in Wage Fund due to:		
Introduction of 45-hour week <sup>a</sup> . . .	250	..
Wage regulation in 1956 . . . . .	400	..
Wage regulation to be carried out in 1957 . . . . .	165	..
Other increases in Wage Fund . . . .	1 000	..
<b>Total increase in Wage Fund . . . .</b>	<b>1 815</b>	<b>7</b>
Increase in old-age pensions . . . .	990	30
Increase due to higher prices paid to farmers . . . . .	200	..
Increase due to 1956 price reductions .	300	..
<b>Total <sup>b</sup> . . . . .</b>	<b>3 305</b>	<b>8.9</b>

Source: *Die Wirtschaft*, 2 May 1957.

<sup>a</sup> The increase under this heading stems from additions to the number of workers employed and to the working hours paid at overtime rates.

<sup>b</sup> The increase in retail trade turnover at constant prices is expected to be DM 2 500 million or 6 per cent above the 1956 level.

**The 1957 Budgets**

The increased attention to be given to the needs of consumers in 1957 is reflected also in this year's budgets. Largely as a result of the improvements in pensions and other social security benefits during 1956 <sup>66</sup> all the countries shown in Table 18 are raising their expenditures on collective consumption, such as culture, education, health and similar welfare outlays. The increases are considerable, and when compared with the 1956 budgets range from 7 per cent in Bulgaria to as much as 36 per cent in Rumania. To balance the increases in personal and collective consumption, other main groups of expenditures (namely, investment, national defence and administration) are in several instances being compressed. But in Bulgaria, eastern Germany and Czechoslovakia the budgets provide for an increase in welfare expenditures without cuts in outlays on defence or administration and, in contrast with developments elsewhere, investment expenditures in Czechoslovakia and eastern Germany are to increase in relation both to the last year's budget and to the actual expenditure in 1956.

In Poland, the Government has decreed a further reduction in military forces, the third within the last two years, bringing the numbers of the army down from 186,000 to 142,000. This has made possible a 16 per cent cut in budgeted defence expenditure and should make it somewhat easier to increase supplies of consumers' goods to the civilian population. Expenditure under the headings of "Administration" and "Justice" is being reduced by 3 per cent and 6 per cent respectively. Another feature of the Polish budget is the relatively small increase in accumulation

by socialized enterprises. This is due, *inter alia*, to the planned increase in material input per unit of production, especially in light industries, where an increased material input per unit of output is envisaged, in particular, in wool, cotton and leather, resulting in an improvement in quality of the goods produced, without any increase in their prices. Revenue coming from agriculture is expected to fall, largely as a result of a decrease in obligatory deliveries of grain and a doubling of the prices paid for them. The revenue from land tax remains unchanged despite the fact that, as a consequence of the dissolution of co-operative farms and the present desire on the part of farmers to possess more land, the area of land under private farmers is likely to increase significantly.<sup>67</sup> Expected revenue from taxes on private enterprises also shows a very small increase despite the increased number of new artisan shops which are likely to start activity during the year.<sup>68</sup>

In the other countries for which data are available, the budgeted revenues from turnover tax diminish or remain practically stable, despite the planned expansion of production and domestic trade. This is particularly noticeable in Czechoslovakia, a country where turnover tax has a relatively high share in the total state revenue. Though the expected revenue from the tax remains unchanged in Czechoslovakia, this does not imply new reductions in turnover tax rates since the retail price reductions in April and December 1956 (wholesale prices remaining unchanged) were sufficient to account for the stabilization of total revenue in 1957. The expected total revenue from both turnover tax and accumulation of socialized enterprises increases in comparison with last year's budget by 3 per cent only, while the total revenue from all sources shows a 9 per cent increase. In Albania also the virtual stabilization of turnover tax receipts results from the reductions in rates which came into force last November. Revenue from socialized enterprises in eastern Germany, however (including turnover taxes), is expected to increase faster than total revenue (i.e., by 12 per cent), partly as a result of higher profits in uranium mining.

Another feature of this year's budgets is a reduction in the income tax paid by certain co-operatives in some countries. In Rumania, artisans' co-operatives which have a profit of 5 per cent will pay 5 per cent

<sup>67</sup> *Land Tax as a Percentage of Income of Private Farmers*

	1956	1957
Percentage of total income, including own consumption . . . . .	4.4	4.0
Percentage of monetary income . . . . .	8.5	7.3

Source: *Finanse* No. 3, 1957, p. 8.

<sup>68</sup> In the fourth quarter of 1956 alone 6,000 new shops were registered—i.e., an increase of 7 per cent in the total number of shops.

<sup>66</sup> See the SURVEY for 1956, Chapter I, Section 5, for a full description of these developments.

**TABLE 18**  
**The public accounts of six eastern European countries**  
*Billions of national currencies at current prices*

	ALBANIA			BULGARIA		CZECHOSLOVAKIA		
	1956		1957	1956	1957	1956		1957
	Budget estimates	Provisional results	Budget estimates	Budget estimates	Budget estimates	Budget estimates	Provisional results	Budget estimates
<b>EXPENDITURE</b>								
National economy . . . . .	5.1	4.6	5.5	9.8	10.4	48.1	47.3	53.2
of which								
Investment . . . . .	3.6	..	..	4.0	3.6	25.2	26.5	30.1
Agricultural development . . . . .	1.0	0.9	1.2	2.1	2.8	8.8	9.4	10.3
Defence . . . . .	1.1	..	1.0	1.5	1.5	9.6	9.1	9.3
Welfare . . . . .	2.6	2.5	2.9	4.1	4.4	28.8	28.7	31.9
Administration . . . . .	1.0	0.6	0.6	0.7	0.7	3.4	3.4	3.5
Other expenditure . . . . .	4.0	2.7	4.9	1.5	1.4	—	—	—
Total . . . . .	13.8	13.4	14.9	17.6	18.4	89.9	88.5	97.9
<b>RECEIPTS</b>								
Turnover tax . . . . .	6.4	5.2	5.4	9.4 <sup>b</sup>	6.8 <sup>b</sup>	45.8	44.3	44.4
Receipts from profits of state enterprises . . . . .	0.6	0.7	0.8	2.5	2.1	14.4	12.7	17.8
Direct taxes . . . . .	1.0	..	..	1.2	1.2	10.7	10.6	10.7
Other receipts . . . . .	6.3	..	..	5.4 <sup>b</sup>	8.4 <sup>b</sup>	19.4 <sup>e</sup>	22.1 <sup>e</sup>	25.3 <sup>e</sup>
Total . . . . .	14.3	14.5	15.0	18.5	18.5	90.3	89.7	98.2
Surplus of receipts over expenditure . . . . .	0.5	1.1	0.1	0.9	0.1	0.4	1.2	0.3
<b>EASTERN GERMANY</b>								
	1956		1957	POLAND		RUMANIA		
	1956		1957	1956	1957	1956	1957	
	Budget estimates		Budget estimates	Budget estimates	Budget estimates	Budget estimates	Provisional results	Budget estimates
<b>EXPENDITURE</b>								
National economy . . . . .	14.2	..	..	73.4	75.0	26.1	24.4	23.9
of which								
Investment . . . . .	4.7	..	..	38.0	35.0	11.0	..	8.9
Agricultural development . . . . .	3.8	..	..	13.0	14.8	3.6	..	..
Defence . . . . .	1.0	1.0	1.0	12.1	10.2	4.0	4.0	3.7
Welfare . . . . .	11.5	14.2	14.2	32.3	40.1	7.7	8.0	10.5
Administration . . . . .	2.7	2.6	2.6	18.9	10.2	1.4	1.5	1.5
Other expenditure . . . . .	6.0	..	..	..	3.3 <sup>a</sup>	5.2	3.9	5.6
Total . . . . .	35.5	39.1	39.1	136.7	138.8	44.4	41.8	45.2
<b>RECEIPTS</b>								
Turnover tax . . . . .	..	..	..	122.5 <sup>c</sup>	119.9 <sup>c</sup>	17.3	15.9	16.5
Receipts from profits of state enterprises . . . . .	..	..	..	..	..	7.9	7.1	8.3
Direct taxes . . . . .	7.5	..	..	13.1 <sup>d</sup>	13.6	3.9	3.9	4.2
Other receipts . . . . .	..	..	..	5.7	6.8	16.3 <sup>f</sup>	15.5 <sup>f</sup>	17.1 <sup>f</sup>
Total . . . . .	35.5	39.1	39.1	141.3	140.3	45.4	42.4	46.1
Surplus of receipts over expenditure . . . . .	0.0	0.0	0.0	4.6	1.5	1.0	0.6	0.9

Sources : Albania : *Zeri i Popullit*, 3 April 1956, 20 and 21 February 1957; Bulgaria : *Robotnichesko Delo*, 13-16 March 1957, *Finansi i Kredit*, No. 8, 1956, pp. 9-12; Czechoslovakia : *Rudé Právo*, 3 March and 18 April 1957. Eastern Germany : *Neues Deutschland*, 30 April 1957; Poland : *Trybuna Ludu*, 11 March 1957; Rumania : *Schneia*, 22 March 1957.

NOTE. — For a comparison with earlier years, see *Economic Bulletin for Europe*, Vol. 8, No. 1, Table 12, pp. 26-27.

<sup>a</sup> Of which 800 million zlotys at the disposal of the Council of Ministers, 500 million zlotys of state debt, and 2,000 million zlotys non-appropriated funds.

<sup>b</sup> A certain part of turnover tax is included in the item "Other receipts".

<sup>c</sup> Including social insurance premia.

<sup>d</sup> Of which 5.9 billion zlotys receipts from private enterprises and professions and 7.2 billion zlotys from taxes on wages and salaries.

<sup>e</sup> Social insurance premia included in these three figures are, in billion kcs, 12.7, 14.4 and 16.0 respectively.

<sup>f</sup> Of which 2½ billion lei for social insurance premia.

of their profits in taxes, as compared with 20 per cent paid formerly; invalids' co-operatives, which until now have paid taxes amounting to almost 6 million lei annually, are to be fully exempt from income taxes, and the tax on consumer co-operatives will be reduced from 25 per cent to 12 per cent. The savings from these reductions, it is promised, will remain in the funds of the co-operatives and "will lead to an increase in the profit funds which are distributed among members and in funds earmarked for social and cultural purposes".<sup>69</sup>

The 1957 budgets have a number of other features in common. One is that in general they do not provide for the considerable budget surpluses which were usual in the past. The absence of those reserves will call for a higher degree of financial discipline and strict adherence to the budgetary allotments. Another common characteristic is that the share of local government in the total state budget is to rise in all countries. The local governments take over from the state budgets several tasks which hitherto were financed centrally and receive new revenues previously paid to the state budgets. In Poland, for instance, the revenue of the local governments is to increase from 4,000 million zlotys in 1956 to 11,709 million zlotys in 1957 and in addition contributions from the Central budget to local governments is to increase considerably.

Finally, the disfavour into which semi-compulsory state loans have been falling in the past year is made complete in the 1957 budgets, none of which makes any provision for receipts from mass subscription to state loans (although government bonds remain on offer in various forms through savings banks). In the Soviet Union the renunciation of the "mass" loan as from 1958 has been accompanied by a postponement of repayment on outstanding loans until 1977-1997 and the renunciation of all service thereon. In the past, subscriptions to state loans in the Soviet Union have had practically the same immediate effects on consumers' incomes as would have been produced by an income tax, and interest payments on past loans have been distributed not very differently from new subscriptions. The abolition of new subscriptions and the postponement of further service of old loans will therefore probably have only minor effects on the distribution of personal disposable incomes.

### *The Plans for Agriculture*

It is at present clearly recognized in all eastern European countries that a further significant rise in total personal incomes depends directly upon a marked improvement in home supplies of food and of

agricultural raw materials. This view has been reinforced by the difficulties of the present balance-of-payments situation. Efforts to increase agricultural production in these countries are reflected in the policies applied since 1953, and particularly in the new measures introduced towards the end of 1956;<sup>70</sup> and during the first quarter of this year still further changes in agricultural policies have been made.

At discussions at the Co-operative Congress which took place in Prague in March of this year on ways and means of comparing the working of collective farms in Czechoslovakia, particular attention was focused on problems of remuneration for work performed and ways of attracting additional manpower. It was suggested that in assessing final earnings, actual yields achieved should be taken into consideration, as well as the volume and quality of work; and it was also decided that the richer villagers, hitherto excluded from collective farms, could now be accepted as members. Finally, measures were discussed to limit the size of private plots and the number of domestic animals kept on them in order to release labour for common husbandry.

In Rumania, earlier policies to encourage the development of co-operative farms<sup>71</sup> have resulted in an increase in the total area of collective farms between 31 December 1956 and 31 March 1957 by 246,000 hectares or about 15 per cent. In Poland, however, since the sudden dissolution of the great majority of collective farms in the autumn of 1956,<sup>72</sup> the main efforts of the authorities have been directed towards strengthening the economic position of the remainder and giving help to farmers who left the collectives, and who are now faced with the problem of cultivating about 1.5 million hectares of land on an individual basis. In Albania, the campaign for collectivization has been intensified by the setting of a target of 1,400 farms, to cover 55 to 60 per cent of the sown area, by the end of the year.<sup>73</sup> By mid-March there were already 1,018 co-operative farms, as compared with 881 at the beginning of the year.

In the field of agricultural income, all countries maintain their policies of increasing the material

<sup>70</sup> For discussion of these policies, see the *SURVEY* for 1956, Chapter 1, page 21 *et seq.*; and for a description of the present situation in Hungary, see the Note in this *Bulletin*.

<sup>71</sup> See *Economic Bulletin for Europe*, Vol. 8, No. 3, p. 30.

<sup>72</sup> In June 1956 there were 10,600 co-operative farms in existence, comprising 2 million ha. of agricultural land. It is officially stated that at the beginning of May 1957 there were 1,549 co-operative farms in Poland, with 266,300 ha. of agricultural land and worked by 27,000 farm families. In addition, there were in existence 700 newly created or "reactivated" co-operative farms on which no information is available. (*Trybuna Ludu*, 7 May 1957).

<sup>73</sup> Report of Hysny Kapo, Secretary of the Albanian Workers' Party.

<sup>69</sup> *Scinteia*, 23 January 1957.

TABLE 19  
Sales of building materials for individual consumers in Poland

Commodity	Unit	Actual supplies in 1956 Total	Planned supplies in 1957			
			Total	Towns	Agriculture	
						Percentage of total supplies
Cement . . . . .	Thousand tons	660	1 030	120	910	88
Bricks . . . . .	Million pieces	457	647	147	500	77
Lime . . . . .	Thousand tons	323	425	35	390	92
Tiles . . . . .	Million pieces	28	33	3	30	91
Asbestos cement . . . . .	Thousand m <sup>3</sup>	2 130	2 300	200	2 100	91
Glass . . . . .		4 841	5 500	1 550	3 950	72
Coniferous sawnwood . . . . .	Thousand m <sup>3</sup>	758	1 179	174	1 005	85
Total timber materials . . . . .	Million current zlotys	447	2 030 <sup>a</sup>	276	1 754	86

Sources: *Gazeta Handlowa*, 29 March 1957.

<sup>a</sup> Prices for timber have been doubled in 1957.

incentives to peasants which were introduced at the end of last year, and generally have extended them further. In Bulgaria, the Government maintains the relation between prices paid to farmers and prices of manufactured consumers' goods sold to farmers, while prices for factors of production such as fertilizers, equipment, building materials and services tend to decrease. In Rumania, following the abolition of compulsory deliveries from 1 January 1957, the contractual delivery system which already existed for other products has been completed by the introduction of a similar system for grains. Contracts are supposed to be signed at least one month before harvest and to cover not less than 200 kg. of grain. Producers can choose to have the price fixed either at the time of signing the contract (on the basis of an agreement on price reached between the producer and the State at the time) or at the time of delivery (when the current state procurement prices would be paid).<sup>74</sup> In Poland the increase in agricultural income is accompanied by an increase in prices of materials and equipment for agriculture. Nevertheless, farm revenues should rise more than farm costs.<sup>75</sup> Farmers will receive additional incomes from reductions in current land tax, as well as from cancellations of arrears of payments of this tax which will be granted more liberally by local national councils in future.

<sup>74</sup> No particulars of contract prices now being offered are available, but they are known to be well below current free market prices.

<sup>75</sup> It is officially estimated that farmers will receive this year about 4 billion zlotys more for their produce due to an increase in state procurement prices, and about 1.5 billion zlotys more on account of increased production. On the other hand, they will pay more to the State—about 4.2 billion zlotys—for factors of production purchased from the State (*Trybuna Ludu*, 10 April 1957).

The policy of providing relatively high supplies of equipment, fertilizers and building materials to agriculture is maintained in all countries. Supplies of agricultural machinery in Czechoslovakia and eastern Germany are planned to be on at least the same high level as last year, and supplies in Poland in 1957 should be far above those of 1956.<sup>76</sup> In Poland attention is focused in 1957 on supplies of machinery for use on small-scale farms, and it has been decided that machinery and tractors may be sold by the state agencies to individual farmers or groups of farmers. The administration of the machine and tractor stations is being considerably reduced; agricultural experts hitherto employed on the stations are being transferred to work in the agricultural sections of local national councils, and political staff are being discharged. Payments in kind to M.T.S. are abolished, and the main attention of the M.T.S. is being directed towards repair and maintenance work on agricultural machinery. A very considerable increase in supplies of building materials to agriculture is also planned in Poland (see Table 19). In the past, supplies were practically non-existent, so that the present demand is very high.

It is premature to speak in the first quarter of the year about the results of agricultural policies

<sup>76</sup> In Czechoslovakia, tractor supplies rose by 28 per cent between 1955 and 1956. In eastern Germany, stocks of machinery are to increase as follows: manure spreaders 52 per cent, drillers 34 per cent, hoeing machines 38 per cent. Some planned supplies to agriculture in Poland in 1957 are as follows (index numbers—1956 = 100):

Cement . . . . .	173	Cultivators . . . . .	103
Timber . . . . .	172	Mowers . . . . .	162
Lime . . . . .	120	Harvest machinery . . . . .	193
Ploughs . . . . .	162	Horse-drawn threshing machinery . . . . .	194
Harrows . . . . .	153	Chaff cutters . . . . .	168

Source: *Trybuna Ludu*, 28 March 1957.

introduced in eastern Europe a few months ago. Some favourable signs are, however, reported in Poland, where the trend to abandon land has been not only stopped, but reversed. Farmers seek the allocation of additional land and the return of land previously taken over from them by state farms and co-operatives;<sup>77</sup> the price of land is increasing in all provinces, and it appears that waste land suitable for cultivation—which in 1956 amounted to about 200,000 hectares—will disappear this year. Already, large deliveries of produce to the free market have brought about a fall in prices to levels which in March were generally about 10 per cent below those of March 1956.<sup>78</sup> Better weather than last year may account in part for this result; and a spectacular fall to only about half last year's level in free market prices for potatoes was partly due to the very good harvest in 1956. The larger volume of agricultural produce in the free market, however, may stem in part from the desire of farmers to earn more in order to invest in their farms.

Animal stocks in eastern Europe at the end of 1956 showed on the whole a tendency to increase, or to remain at the relatively high level already reached, though livestock somewhat decreased in Hungary and the number of pigs in eastern Germany has fallen (see Table 20).

This fall in pig numbers, which includes a reduction of 11 per cent in the number of sows, is a bad omen for pork production in 1957, in spite of the expected shortening of the feeding period. However, a decrease in home meat production seems to have been anticipated in the 1957 Plan, which provides for a 67 per cent increase in meat imports (in 1956 they covered 17 per cent of domestic consumption) in order to achieve an 8 per cent increase in total meat supplies. A declining trend of milk output in eastern Germany is also apparent. In Czechoslovakia, on the other hand, the steady increase in milk prices over the last four years has probably contributed to the 5 per cent increase in total milk production registered last year with a lower stock of cows. In 1957 the increase in milk yields and in total milk production is expected to continue.<sup>79</sup>

<sup>77</sup> See *Trybuna Ludu*, 6 April 1957 and *Zycie Warszawy*, 13 April 1957.

<sup>78</sup> See *Zycie Gospodarcze*, No. 14, 1957.

<sup>79</sup> At the end of April, the Government decreed an increase in prices paid per kilo of live weight of 1.50 kčs. for all cows and heifers sold on a state procurement basis. A supplementary allowance, which presumably is of a temporary nature, of 4.60 kčs. per kg. was also introduced on second-quality beasts. It is expected that this measure will induce farmers to eliminate inferior animals and to breed higher-quality cows (*Rudé Právo*, 21 April 1957).

TABLE 20  
Livestock numbers in eastern Europe

Thousands

Country	Total cattle	Of which: Cows	Pigs	Sheep
<i>Eastern Germany</i>				
December 1955 . .	3 760	2 100	9 029	1 807
December 1956 . .	3 719	2 115	8 326	1 892
<i>Czechoslovakia</i>				
January 1956 . . .	4 107	2 084	5 285	1 000
January 1957 . . .	4 134	2 071	5 369	956
<i>Poland</i>				
June 1955 . . . . .	7 912	5 455	10 888	4 243
June 1956 . . . . .	8 353	5 600	11 561	4 223
Plan 1957 . . . . .	8 686	..	11 960	4 405
<i>Bulgaria</i>				
January 1955 . . .	1 867	..	1 316	7 802
January 1956 . . .	1 602	577	1 413	7 829
January 1957 . . .	a	..	b	a
<i>Rumania</i>				
January 1956 . . .	4 800	..	4 950	11 120
<i>Hungary</i>				
March 1955 . . . . .	2 128	973	5 818	..
March 1956 . . . . .	2 170	994	6 056	1 931
March 1957 . . . . .	1 968	963	4 987	1 846

Sources: Direct communications by governments; *Statistické Zprávy*, No. 1, 1957, p. 8; *Trybuna Ludu*, 18 March 1957; *Bluhetyn Stat.*, No. 1, 1957.

a Unspecified decline.

b Unspecified increase.

In plant production an interesting initiative has been taken in Bulgaria and Albania. According to an agreement recently concluded with the Soviet Union, Bulgaria and Albania will concentrate on the production of labour-intensive crops such as vegetables and fruit needed by other eastern European countries and the Soviet Union. Czechoslovakia and eastern Germany were associated with the Soviet Union in the Bulgarian arrangements. Soviet technical assistance is to be provided to Albanian production of cotton, fruit, tobacco, vegetable oils and other crops, as well as to fisheries and mineral extraction. According to the Bulgarian agreement, Bulgaria will considerably increase exports of vegetables, fruit and products to the other three countries concerned up to 1970. These arrangements suggest an upgrading of agriculture in the hierarchy of economic activities in this area, as well as a step towards a more rational international division of labour.

## 6. CHANGES IN THE SYSTEM OF ECONOMIC PLANNING AND CONTROL IN THE SOVIET UNION

Economic developments in the Soviet Union during 1956 and the Plan for the years 1956 to 1960 were discussed in Chapters I and II of the SURVEY for 1956. Since these chapters were written, little further information on the development of the Soviet economy has become available; but a major event has been the announcement of plans for changes in the system of management of the Soviet economic system.

### *The Reorganization of Planning in the Soviet Union*

Although much has been done in the Soviet Union since 1955 to decentralize the structure of economic administration,<sup>80</sup> the reorganization proposals approved by the Supreme Soviet in May<sup>81</sup> are more radical than any change introduced in the past quarter-century. The proposals show that the existing system of administration and the powers of the central planning authority have become insufficient to ensure full exploitation of the potentialities of planning.

The choice of horizontal integration<sup>82</sup> as the pattern for Soviet industrial control, dating from the division in 1932 of the Supreme Economic Council into industrial commissariats, presupposed centrally controlled movements of supplies between each stage of processing. The rapid expansion of demand for raw materials, semi-manufactures and equipment brought by the speed of industrialization inevitably led to delays in and shortages of supplies, and in turn to a desire on the part of ministries to bring some of their own supplies under their direct control. In this desire, the central planning authority acquiesced. Thus, to cite an example quoted in the reorganization proposals, the Ministry of the Building and Road Building Machinery Industry was permitted not only to have a foundry shop attached to its excavator plant in Kiev, but to extend its capacity in order to supply its factories in eight other towns (one of them no less than 3,500 km. from Kiev) although other ministries' foundries in each of those towns were despatching castings to other places. In other cases, while one

ministry's plant was operating well below capacity, another ministry was allowed to build new capacity in the same town for the same product.

A move to enhance the central control of supplies was made in 1948 by the creation of a State Committee of Supplies (Gossnab), but the Committee was abolished in 1953 when the solution to departmentalism was seen as a massive horizontal integration designed to improve supply relationships within very broad industrial groups. In March 1953 Mr. Malenkov's new administration merged the 41 ministries with production responsibilities into 18,<sup>83</sup> but even before the end of the year 13 of the former ministries had been re-established, and by the end of 1955 even more were in existence than before the 1953 reform (46 ministries and one independent administration).

In 1955 the planning authority was divided into two bodies—the Gosplan for long-term planning and the Gosekonomkomissia for current planning and control—with the apparent aim of strengthening the central power of allocating current supplies and capital resources. This was taken a stage further in December 1956, when the direction of Gosekonomkomissia was greatly strengthened; but the present proposals nevertheless envisage the abolition of the Gosekonomkomissia.

The new plans provide for a return to the principle of local vertical integration which was the predominant feature of the early days of Soviet industrial organization.<sup>84</sup> There are to be 92 economic areas, each placed under the control of a regional economic council: the units are to be fairly small in the highly developed industrial zones (e.g., there are to be 68 units for the Russian Federation and 11 for the Ukraine) but large in the less developed areas<sup>85</sup> (thus each of the other 13 Union-republics will be a single

<sup>80</sup> See the SURVEY for 1955, pp. 214-5 and the SURVEY for 1956, Chapter I, pp. 39-40.

<sup>81</sup> Theses of a report of the Central Committee of the Communist Party of the Soviet Union and the USSR Council of Ministers (*Pravda*, 30 March 1957) and Mr. Khrushchev's report to the Supreme Soviet (*ibid.*, 8 May 1957).

<sup>82</sup> In Soviet terminology the term "horizontal integration" has exactly the opposite meaning to the sense in which it is used here, and means regional integration—i.e., the equivalent of "vertical integration" as used in English-speaking countries (see below).

<sup>83</sup> There were 21 commissariats in 1939, when the multiplication of departments took on major proportions.

<sup>84</sup> E.g., in the early 'twenties Yugostal embraced the coal mines, cokeries, engineering and auxiliary plants situated in the south, and Chemugol associated chemicals, glass, coal and timber in the Ukraine; and the Ivanovo-Voznesensk textile trust grouped the local linen and cotton mills from spinning yarn to finished cloth.

<sup>85</sup> The delineation of some areas was a matter of public disputation before the Supreme Soviet met: thus in *Pravda* of 3 April the Chairman of the Irkutsk oblast soviet proposed an Eastern Siberian region which would have comprised the Enisei and Lena basins as far as the Arctic Sea and trans-Baikalia as far as the Amur. On 16 April, *Pravda* published an article by the chairman of the Krasnoyarsk Krai soviet demanding a unit covering only the Yenisei basin. The original proposals suggested an independent region for the Lena basin.

unit). The city of Moscow, whose industries comprise metallurgy, engineering, chemicals and consumer-goods production, will form a region by itself. During April, many regional authorities formulated proposals for their own areas. The concept of local vertical integration was most clearly seen in the proposal by Leningrad oblast not only to unite with the less developed Novgorod and Pskov oblasts, but to take in that part of Vologda oblast where the new Cherepovets metallurgical works is located.

A more intensive use of local raw materials and the provision of certain semi-manufactures such as forgings, castings and pressings from specialized shops serving a whole region were the main recommendation of the All-Union Conference of Workers in Industry in May 1955,<sup>86</sup> and formed a prominent part of the Directives on the Sixth Five-year Plan. While these tendencies are strengthened by the new proposals, the danger that vertical integration will be carried over into local autarky is clearly recognized: "These tendencies might be manifested in attempts to develop their own raw material base on deposits whose exploitation may be less profitable than in other areas; in a desire to organize in their area the production of various kinds of equipment and auxiliary supplies which are made at specialized plants, and also in other deviations from economically expedient methods of economic management."<sup>87</sup>

In essence, the problem is that of ensuring adherence to orthodox costing principles; but the infringements into which the local economic councils may be tempted are precisely those for which many of the central industrial ministries have been condemned to death. The proposals claim that, "In combating such phenomena it is necessary, besides the means of political guidance, to make full use of such powerful instruments in the hands of the state as uniform national economic planning, centralized finances and country-wide statistics. The State Planning Committee must thoroughly study the economic investments contemplated by the areas and nip in the bud every attempt to use funds to the detriment of the interests of the State as a whole."<sup>88</sup>

However, the central controls envisaged as safeguards against local autarky are, in fact, those which have proved an inadequate protection against ministerial autarky—though the intention is to strengthen their operation in future. Although the proposals call for a strengthening of these centralized controls—

notably those of the Communist Party and of the State Planning Committee—the main reliance is placed on the restrictions written into the constitutions of the regional economic councils.

In the first place, the economic councils are not to be controlled by the local authorities (viz., the Soviet of the Autonomous Republic, krai or oblast). The voice of the local authorities in the direction of the regional councils' affairs will be a purely consultative one,<sup>89</sup> for the councils will be directly subordinate to the Union Republic, and in this control other Republican authorities will be greatly assisted by the retention of industrial ministries (of coal, oil, ferrous and non-ferrous metallurgy, etc.) at the Republican level.<sup>90</sup> Secondly, the scope of decisions devolved to regional councils will be limited to production and to some say in determining the pattern of investment within the region. The rate of accumulation in any region and the movement of capital between regions is to be determined centrally, and procurement prices, retail prices and wage-rates<sup>91</sup> will be uniform throughout the country (with the usual zonal variations). Thirdly, the State Planning Commission will directly allocate goods in particularly short supply as well as draw up production plans for the main industrial products; and this will involve the retention of key industrial ministries at a centralized (All-Union) level.<sup>92</sup> Fourthly, many regions will specialize around certain products<sup>93</sup> and the State Planning Commission will regulate inter-regional movements of goods. Finally, the essential features of the centralized collection of turnover taxes and profit deductions will be retained: collection by the Ministry of Finance from the enterprises will replace the present system of collection from the selling agencies of the (central) industrial ministries.

<sup>86</sup> From the point of view of the status of local authorities in economic management this is nevertheless an improvement, for hitherto industries other than minor local establishments have been wholly outside the competence of local authorities. Moreover, many more plants will be transferred to administration by local soviets.

<sup>87</sup> This provision did not appear in the original "theses" and may well represent an entrenchment of the principle of horizontal integration.

<sup>88</sup> A decision of the State Committee on Labour and Wage Problems published on 25 March requires a unified tariff qualification handbook for the main trades to be prepared by 1 December 1957.

<sup>89</sup> The All-Union Ministries of Aircraft Production, of Shipbuilding, of Radio Engineering, of Chemicals, of Medium Engineering and Transport Engineering, of General Engineering (Defence Industry) and of Electricity are to be retained.

<sup>90</sup> E.g., a republic would concentrate upon the manufacture of materials and equipment for producing and processing such local commodities as cotton in the case of Uzbekistan, oil in Azerbaidzhan, non-ferrous metals, etc., in Kazakhstan, and so on in smaller areas.

<sup>86</sup> Ratified and extended by the Party Central Committee in July 1955.

<sup>87</sup> *Pravda*, 30 March 1957.

<sup>88</sup> *Ibid.*

### *Soviet Agricultural Policy*

The new Soviet proposals described above are explicitly concerned with the management of industry and construction, but some devolution of the control of agriculture is also envisaged. Unlike many industrial departments, the Ministries of Agriculture and of State Farms will not be abolished, but will be greatly diminished in size and authority in favour of strengthening the initiative of farm directors and chairmen.<sup>94</sup> Within the farming sector, relatively more resources will avowedly be devoted to state farms. The Party and the Government observed, in a formal declaration,<sup>95</sup> that the share of state farms in total agricultural production had been constantly increasing in the recent past, and that state farm produce was cheaper than that grown by collectives. "It is consequently completely correct for our Party at the present time, in the interests of increasing marketable agricultural supplies, to set a course towards the organizational and economic strengthening of state farms, towards a radical improvement of their management, towards the allocation to state farms of more land both in the virgin land zones and elsewhere where land is untilled or badly used."

Farm production policy has been reoriented, in a series of regional agricultural conferences—five of which were addressed by Mr. Khrushchev—during March and April. Maize was again stressed at all the farm conferences as the cheapest fodder in relation to its labour cost, but Mr. Khrushchev acknowledged that maize had often failed on farms ignorant of or careless in its cultivation. He advised those farms

which as yet could not grow maize properly (and this ideally meant hand-planting) to keep to better-known feeds, such as vetch, oats, clover, timothy grass, etc. Farms are also urged to devote more attention to meat production now that milk supplies have shown considerable improvement.<sup>96</sup> Long journeys of up to 1,000 km. in cattle-trucks from procurement centres to abattoirs are said to have caused serious loss of weight to beef cattle. Moreover, slaughter weights for pigs were in some areas extraordinarily low: Kirov oblast, for example, delivered 144,000 pigs to the state procurement agency at an average weight of 64 kg., compared with the standard 90-110 kg.: these were mere piglets, commented Mr. Khrushchev.<sup>97</sup>

In a country where the supply of animal fats is low as compared with that of other food products, an average slaughter weight of 64 kg. does indeed seem very low. One explanation of a tendency to slaughter animals prematurely may be that, although the consumer price of lard (33 roubles per kg.) is high in relation to the price of pork (17-21 roubles per kg.), this difference is not reflected in the price per kg. of slaughter weight paid to the farmers. It may well be that the marginal increase in price per kilogramme received as a result of feeding animals to a heavier weight is not sufficient to compensate for the additional feeding costs involved, and that a change in the structure of procurement prices might be an effective way of inducing farmers to prolong the feeding period.

<sup>94</sup> Mr. Khrushchev at a conference of farmers from the Central Non-Black Earth Zone, *Selskoe Khozyaistvo*, 2 April 1957.

<sup>95</sup> Appeal of the Central Committee of the Communist Party and Council of Ministers to State Farm Workers, *Selskoe Khozyaistvo*, 27 March 1957.

<sup>96</sup> For the rapid improvement in milk yields and gross supplies see SURVEY for 1956, Chapter I, pages 2-3; in the first five months of the agricultural year 1956/57 (1 October - 1 March) the gross milk output of collective farms was 25 per cent greater than in the same period of 1955/56 and average yields were 54 kg. higher.

<sup>97</sup> Speech to a farmers' conference at Gorky, *Selskoe Khozyaistvo*, 10 April 1957.

## HIGHLY QUALIFIED TECHNICAL MANPOWER IN WESTERN EUROPE

### 1. INTRODUCTION

In many western European countries, increasing concern has been expressed in recent years about an insufficiency in the supply of highly skilled technical manpower for industry. Often the complaint has been about an actual lack of qualified applicants for existing jobs, especially during the most recent years of boom conditions. It would be easy, however, to exaggerate the importance of this acute shortage, at least as far as jobs directly connected with industrial production—as distinct from teaching and research—are concerned. In any case, there are few examples to show that the progress in industrial output in the most recent years has been hampered by a lack of engineers and technologists.

A far more serious aspect of the problem is that of future supply. It is expected in many countries that the requirements—with continuing technological change and on the assumption that a high level of economic activity is to be maintained—will tend to outrun the increase in the available number of trained technical personnel, unless measures are taken to provide for the training of a higher number of technicians and for a more rational use of those available. Accordingly, the main emphasis of this article is on prospects for demand and supply of highly skilled technical manpower over the next few years (Sections 3 and 4 below). As a background to the treatment of the problems of the future, a description of the present situation is first given (Section 2). It must be stressed that the statistical basis for such a description is weak; in particular, the international comparability of the available data leaves much to be desired, although an effort has been made, wherever possible, to adjust the figures with a view to improving their comparability.

For the purpose of the present article, the group of highly qualified technical manpower is defined as including scientists, engineers and technicians. Unless otherwise stated, the groups of scientists and engineers are understood to include graduates in pure science or engineering from universities and institutions of comparable standing, regardless of the work these graduates are performing. The term "technician" is

understood to include persons with a diploma or certificate in technical subjects which is inferior to that acquired by university graduates.<sup>1</sup>

#### *The Location of Present Shortages*

Of the three main fields of employment for highly qualified technical manpower—production proper, research (pure and applied) and teaching—it is the latter two which cause most concern for the future and in which actual shortages have hitherto been concentrated. It seems, in fact, that the high demand from industry has tended to attract qualified manpower from other fields of occupation. This development has taken two forms—a shift of persons hitherto engaged in teaching or research into work connected with current production, and a channelling of more than the normal share of new graduates into industry, where jobs are plentiful and the level of remuneration is usually high by comparison with that in teaching and research.

It is obviously undesirable that research and education, which are rightly considered of basic importance for future economic progress, should thus be sacrificed to the exigencies of current production, and it may well be asked whether the relative levels of remuneration for the three kinds of activity just mentioned are consistent with the requirements of further technical and economic progress.

In 1954-55, the OEEC Manpower Committee made an inquiry into the market conditions for highly qualified technical manpower in western European

<sup>1</sup> The exact definition to be adopted for these terms depends on the purpose of the analysis undertaken. Normally, the distinction is made on the basis of the nature and level of educational training that people have received, or according to characteristics of the work they are performing, or both. Practice in this respect varies a great deal from one country to another. Also, it is extremely difficult to compare the degrees and certificates granted by the large variety of institutions for technical training existing in western European countries, and the distinction between a scientist's, an engineer's and a technician's job is subject to a wide margin of arbitrary judgment.

countries.<sup>2</sup> At that time, the market position appeared to be rather unbalanced. Surpluses were reported only in a few cases, and did not appear to be of significant proportions, while more or less serious shortages were reported from most of the countries. Since then, the situation has not changed substantially, although in some cases the existing deficiencies have become more pronounced and some new ones have emerged.

The most general feature of the situation as described in 1954 was the shortage of teachers of scientific and technical subjects in secondary schools or universities, or both, reported from a number of countries—among them Austria, France, Greece, the Netherlands, Norway, Sweden and the United Kingdom. In Austria, however, the shortage of teachers did not reflect a lack of suitable personnel, but rather an insufficiency of financial means, which prevented both the recruitment of an adequate number of teachers and the improvement of educational facilities. The same is even more clearly true in Italy, where there are frequent complaints that school classes are overcrowded and that the number of students per university professor is excessive—which contrasts with the continuing existence of unemployment or under-employment among qualified teaching personnel. In France, too, budgetary difficulties appear to be partly responsible for keeping the number of teachers in secondary schools below the desirable level. In most other western European countries, however, the financial factor is less emphasized than is the competition of careers in industry and other non-scholastic occupations. This competition between schools and industry tends particularly to limit the availability of teachers for evening courses and of other part-time teachers. These are largely persons who have their main occupation in industry, and in periods of intense industrial activity they find it more difficult to devote part of their time to teaching.

There were also frequent complaints that one, although perhaps not the most important, problem in expanding research work, both basic and applied, is a lack of suitable personnel. The need for increasing the staff of highly qualified technicians and scientists engaged in industrial research was especially stressed in the larger countries: the smaller countries appeared to be less concerned, perhaps because industrial research, both basic and applied, often requires technical apparatus and entails other costs supportable only by very large enterprises, which do not

exist in these countries to the same extent as in the larger.

As regards engineers and scientists engaged in current production, the market situation appeared to differ considerably between countries and between industrial sectors. In several countries—for instance, in western Germany, Sweden, Denmark, Belgium and Switzerland—the high level of building activity led to a shortage of civil engineers. Technological progress, together with the expansion of activity, was responsible for a shortage of mechanical and electrical engineers in Sweden and Switzerland. In the United Kingdom, the chemical industries also found it difficult to recruit a sufficient number of engineers. In France, the most serious shortage seemed to be that of engineers and scientists acquainted with new technological processes (nuclear energy, electronics, etc.), but there was also a general lack of technicians with an intermediate degree of training, in France as well as in several other countries.

Despite these differences, two broad conclusions seem to emerge from the abundant literature on the shortage of highly trained manpower in industry. Firstly, the shortages are mostly concentrated in the chemical and electrical engineering industries—that is, in those branches where technological changes have been particularly pronounced in recent years. Secondly, complaints about shortages of scientists for industry are more restrained than the complaints about a lack of engineers.<sup>3</sup> This might appear rather surprising at first sight, since, on the demand side, the trend is undoubtedly towards an increase in the proportion of scientists to that of engineers in industry, while the output of new scientists has in the past increased at a considerably lower rate than that of engineers. It must be remembered, however, that industry employs only a relatively small part of the total number of scientists, and that scientists employed in teaching form a large reserve on which industry can draw in times of increasing needs. But, in the long run, this solution is of course self-defeating, since it tends to create future difficulties in increasing the output of new engineers, scientists and technicians.

<sup>3</sup> In some countries an attempt has been made to measure these deficiencies. In Great Britain, for instance, the shortage of engineers in industry was recently estimated at 27.5 per cent; in the case of scientists the estimated percentage was 19.5 (see *Scientific and Engineering Manpower in Great Britain*, H.M.S.O., 1956). An inquiry covering 96 per cent of Dutch industry indicated a shortage of scientists and academic engineers in industry of 11 and 13 per cent in March 1955. The corresponding figure for non-academic engineers was 15 per cent (see *Maandstatistiek van de nijverheid*, January 1956).

<sup>2</sup> OEEC, *Shortages and Surpluses of Highly Qualified Scientists and Engineers in Western Europe*, Paris, 1955.

## 2. THE STATISTICAL PICTURE

### The Employment of Engineers and Scientists

The available data on the number of active engineers and their distribution by main economic sectors are brought together in Table 1.<sup>4</sup> It was not possible to make the figures fully comparable as between countries, and caution is therefore needed in interpreting the table.

Among the western European countries for which data are available, Norway and France have the highest numbers of engineers in relation to the active population outside agriculture. Portugal is at the other end of the scale, but the figure may somewhat

under-state the true situation, since it is based on census data and a number of engineers are likely to have been included under other occupational headings.

Be that as it may, there appears to be no close correlation between the degree of industrialization and the ratio of engineers to total non-agricultural employment. For instance, Great Britain, the Netherlands<sup>5</sup> and Belgium show ratios of engineers not higher than those of Italy and Greece. Apart from the statistical deficiencies, this may be explained by the fact that fully qualified engineers make up only a share of the total number of highly qualified technical manpower. Some functions performed by engineers in certain countries may be performed by scientists in others, and the distinction between engineers and scientists (for instance, chemical engineers and chemists) is often far from clear cut. Even more important is the fact that some functions performed in

<sup>4</sup> For the following countries, the total number of engineers is known, but no distribution by economic sectors is available:

	Year	Total number of engineers	
		Thousands	Per thousand employed outside agriculture
Finland . . . . .	1950	6.3	5.9
Greece . . . . .	1954	4.6	3.5
Italy . . . . .	1951	44.4	3.7
Norway . . . . .	1954	7.2	6.8
Sweden . . . . .	1954	9.7	4.1
U.S.S.R. . . . .	1955	585.2	11.3

<sup>5</sup> The total shown for the Netherlands (which refers to the year 1947) is surprisingly low. It is not clear to what extent it is comparable with figures for the other countries.

TABLE I  
Engineers<sup>a</sup> by branch of economic activity

	Austria <sup>b</sup> 1951	Belgium <sup>c</sup>	Denmark 1953	France 1955	Western Germany <sup>b</sup> 1951	Great Britain 1956	Nether- lands 1947	Portugal 1950	Switzer- land 1950	United States 1950
<b>Percentage distribution</b>										
Industry . . . . .	54	55	35	63	53	59 <sup>d</sup>	33	28	38	52
Construction . . . . .	29	6	18	9	22	5	3	14	41	9
Transport and communications . . . . .	4	9	7	5	8	2 <sup>e</sup>	5	6	3	5
Trade, banking and insurance . . . . .	2	12	6	23	1	..	5	5	5	8
Public administration . . . . .	8	11	16		12	18	15	39	13	18
Teaching . . . . .	2	4	5	3	1	3	9	8		2
Others (excluding agriculture) . . . . .	1	3	13		3	..	30	..	..	6
TOTAL . . . . .	100	100	100	100	100	100	100	100	100	100
<b>Number (thousands)</b>	12.6	10.0	6.6	91.8	..	78.5 <sup>f</sup>	6.5	3.4	9.3	521.0
<b>Number per thousand employed</b>										
Industry . . . . .	..	3.7	4.0	10.6	..	4.4 <sup>d</sup>	2.0	1.5	4.2	15.3
Construction . . . . .	..	3.1	9.2	5.9	..	2.5	0.8	3.0	21.4 <sup>g</sup>	11.7
Transport and communications . . . . .	..	3.8	3.3	4.6	..	0.9 <sup>e</sup>	1.1	1.8	2.3	6.6
Trade, banking and insurance . . . . .	..	2.7	1.7	3.5	..	..	0.6	0.8	2.3	4.0
Public administration . . . . .	..	6.3	21.5		..	6.9	2.9	11.8	2.7	8.7
Teaching . . . . .	..	4.8	9.9	..	..	3.7	6.3	..		
Others (excluding agriculture) . . . . .	..	1.1	4.3		..	..	5.3	0.7	..	..
TOTAL . . . . .	5.9	3.4	4.8	6.6	..	3.5 <sup>f</sup>	2.2	2.1	5.2	10.0

Sources and methods: See "Notes to the statistics".

<sup>a</sup> Engineers with an academic diploma.

<sup>b</sup> For Austria and western Germany the percentage distribution relates to qualified and non-qualified engineers and technicians, for which totals amount to 35.2 for Austria and 281.2 for western Germany.

<sup>c</sup> Total refers to 1956 and distribution by branch refers to 1947.

<sup>d</sup> Excluding non-nationalized mines.

<sup>e</sup> Excluding non-nationalized transport.

<sup>f</sup> Including 10.0 estimated in employment not covered by the Ministry of Labour's inquiry.

<sup>g</sup> The high rate shown is due to the inclusion of a large number of architects.

TABLE 2  
Students graduating at technical schools below  
university rank in 1955

Country	Number	Per 100,000 inhabitants	As percentage of university graduates in technology
Austria . . . . .	800	11	148
France . . . . .	4 100	10	97
Western Germany . . . . .	8 650	18	241
Italy <sup>a</sup> . . . . .	7 744	16	328
Norway . . . . .	550	16	235
Sweden . . . . .	1 063	15	185
Switzerland . . . . .	639	13	165
United Kingdom . . . . .	14 334 <sup>b</sup>	28 <sup>b</sup>	423 <sup>b</sup>
	7 846 <sup>c</sup>	16 <sup>c</sup>	232 <sup>c</sup>
U.S.S.R. . . . .	155 500	78	252

Sources: National statistics. For a detailed description of the training systems concerned see "Notes to the statistics".

<sup>a</sup> 1953/54.

<sup>b</sup> Ordinary National Certificate or Diploma.

<sup>c</sup> Higher National Certificate or Diploma.

certain countries by academic engineers are performed in other countries by persons with an intermediate degree of technical qualification. This is particularly true of Great Britain, where the relatively small group of qualified engineers <sup>6</sup> is supplemented by a large number of technicians with a more practical training. As can be seen from Table 2, the number of persons in the United Kingdom who in 1954/55 obtained a Higher National Certificate or a Higher National Diploma amounted to 8,000, and 14,000 obtained an Ordinary National Certificate or Diploma. In the same year, the number of young workers released by industry in order to follow specialized courses was above 300,000. On the whole, the British system of technical education is highly flexible, and the great variety of training channels allows for a rich differentiation of functions and aptitudes. Practical engineers and technicians perform a number of functions which in other countries are carried out by engineers with university training.

The French situation contrasts sharply with the British. The number of fully qualified engineers is far higher, amounting to some 92,000, or 6.6 per cent of the non-agricultural manpower. Nevertheless, this large number of engineers seem to be fully employed. In the OEEC inquiry of 1954, the situation was described as "well balanced" and since then some

<sup>6</sup> The figure of 78,500 shown in Table 1 includes not only engineers with a university degree, but also a number of non-academic engineers who are members of a professional association.

shortages have appeared. Three reasons may be invoked to explain the existence of a shortage of engineers in France in spite of their very large number: first, engineers seem more often than in other countries to be employed in administrative and commercial functions rather than in production proper; secondly, it seems that a high percentage of the engineers are of relatively high age, and their training may often not correspond to present needs; finally, there appears to be considerable under-employment of engineers in France, in the sense that they often perform technical functions for which they are over-qualified. In other words, the shortage of engineers in that country is to a certain extent the reflection of the insufficient number of technicians with an intermediate degree of training. In fact, the number of new technicians leaving school every year is no higher than the number of new academic engineers produced.

In a general way, requirements of engineers are strongly affected by the quantity and quality of

TABLE 3  
Pupils enrolled in schools as percentage of total  
population of the same age

Percentages

Country and year	Age				
	14	15	16	17	18
<b>Full-time students</b>					
Belgium 1951/52: Total . . .	25	23	19	12	6
France 1951: Total . . . . .	58	40	28	18	11
Primary schools . . . . .	26	8	3	—	—
Vocational schools . . . . .	20	22	17	10	4
Secondary schools . . . . .	12	10	8	7	5
Higher education . . . . .	—	—	—	1	2
Italy 1951: Total <sup>a</sup> . . . . .	13	12	9	8	6
Primary schools . . . . .	3	1	1	1	—
Vocational schools . . . . .	5	4	2	2	2
Secondary schools . . . . .	5	6	6	7	4
United Kingdom 1954/55: Total	..	35	19	10	6
Vocational schools . . . . .	..	2	2	1	1
Secondary schools . . . . .	..	33	17	9	3
Higher education . . . . .	—	—	—	—	2
<b>Full-time and part-time students</b>					
Belgium 1951/52: Total . . .	33	33	30	23	16
Western Germany 1951: Total	85	76	69	62	44
Netherlands 1950: Total . . .	76	51	44	36	27
United Kingdom 1954/55: Total <sup>b</sup>	..	70	57	42	25

Source: World Survey of Education, UNESCO, 1955, and national sources.

<sup>a</sup> Excluding university students.

<sup>b</sup> Includes vocational schools only for part-time students.

technicians available. Unfortunately, few reliable data are available on the number of active technicians in European countries.<sup>7</sup> Some indications can be drawn from Tables 2 and 3, although it has been possible to include only a few countries.

Table 3 suggests that full-time students make up only a small proportion of total numbers in the relevant age-groups. Technical training thus has to be largely provided through evening courses and other part-time training.<sup>8</sup> Western Germany seems to be in a relatively favourable position, if it can be assumed that the relative number of full-time students is not much different from that found in other countries. No complete data are available on the number of part-time students in France and Italy, but in both

<sup>7</sup> In Austria, the number of non-academic engineers and technicians was given as 23,700 in 1951, as against 12,600 active academic engineers. In Norway, the corresponding figures were given as 14,000 to 15,000 and 7,200. In Sweden, the ratio of technicians to academic engineers is as high as 5 : 1.

<sup>8</sup> In the United Kingdom, evening courses account for some two-thirds of students in part-time vocational training.

TABLE 4  
Engineers active in industrial sectors

Industrial sector	Denmark 1953	France 1955	Great Britain 1956	Netherlands 1947	United States 1954
<i>Percentage distribution</i>					
Metal-making and metal-using . . . .	47	55	60	50	54
Chemicals . . . . .	19	16	7	11	7
Electricity and gas . .	10	8	18	11	8
Food . . . . .	10	4	1	7	2
Textiles . . . . .	2	8	1	5	1
Mining . . . . .	—	6	10	7	6
Others . . . . .	12	3	3	9	22
Total . . . . .	100	100	100	100	100
<i>Number (thousands)</i> . .	2.3	58.3	46.3	2.2	355.0
<i>Number per thousand employed</i>					
Metal-making and metal-using . . . . .	7.0	16.6	6.0	3.2	..
Chemicals . . . . .	24.7	29.4	5.8	5.5	..
Electrical and gas . .	19.6	34.3	21.7	7.7	..
Food . . . . .	2.3	4.3	0.6	0.9	..
Textiles . . . . .	0.4	4.4	0.4	0.4	..
Mining . . . . .	—	8.5	5.6	3.1	..
Others . . . . .	1.5	1.5	0.8	..	..
Total . . . . .	4.0	10.6	4.4	2.0	..

Sources and methods: See "Notes to the statistics".

countries the impression of competent observers is that their number is far too small.

# Engineers and Scientists in Individual Industries

As was to be expected, the engineers occupied in industry are heavily concentrated in the metal-making and metal-using industries (see Table 4). However, the highest ratios of engineers to total manpower (see the lower part of the table) are found in electricity and gas production and in the chemical industries, while food and textile industries have relatively few engineers and an extremely low ratio of engineers to total manpower.

The number of active scientists is known for only a few countries, and a break-down by main economic sectors is available for only three western European countries and for the United States (see Table 5). Though the basis for generalization is weak, it may be noted that a far higher share of the scientists is employed by industry in the two big countries, the United States and the United Kingdom, than in Belgium and the Netherlands.

For two countries only—Great Britain and the Netherlands—is it possible directly to compare the relative importance of engineers and scientists

TABLE 5  
Scientists by branch of economic activity

	Belgium 1947	Great Britain 1956	Netherlands 1947	United States <sup>a</sup>
<i>Percentage distribution</i>				
Industry . . . . .	24	38 <sup>b</sup>	15	49
Teaching . . . . .	53	50	46	25
Public administration . .	7	12	6	17
Other . . . . .	16	..	33	9
Total . . . . .	100	100	100	100
<i>Number (thousands)</i> . . . .	1.9	56.2 <sup>c</sup>	2.8	122.5
<i>Number per thousand employed</i>				
Industry . . . . .	0.3	1.8 <sup>b</sup>	0.4	3.4
Teaching . . . . .	12.1	38.8	14.5	..
Public administration . .	0.8	4.3	0.5	1.8
Other . . . . .	0.3	..	0.6	..
Total . . . . .	0.6	2.5 <sup>c</sup>	0.9	2.4

Sources and methods: See "Notes to the statistics".

<sup>a</sup> Total refers to 1950; distribution by branch refers to 1951.

<sup>b</sup> Excluding non-nationalized mines.

<sup>c</sup> Including 5,000 estimated in employment not covered by the Ministry of Labour's inquiry.

TABLE 6  
Distribution of scientists and engineers by individual industries  
Percentages

Industry	Great Britain 1956		Netherlands 1947	
	Scientists	Engineers	Scientists	Engineers
Treatment of non-metalliferous mining products . . . . .	2.2	1.2	2.1	4.0
Chemicals and allied trades (other than oil refining) . . . . .	37.0	7.2	54.3	12.8
Mineral-oil refining . . . . .	4.2	1.9	0.5	0.5
Metal manufactures—Iron and steel . . . . .	1.4	5.5	} 0.8	4.6
Non-ferrous metals . . . . .	1.9	2.5		
Shipbuilding and ship-repairing and marine engineering . . . . .	—	2.3	—	4.8
Agricultural machinery, railway equipment, precision instruments, jewellery, clocks and other metal goods . . . . .	2.8	6.8	} 10.9	29.5
Other plant and machinery (except electrical) . . . . .	3.7	18.5		
Motor vehicles, cycles, etc. . . . .	1.0	5.9	0.3	0.5
Constructional engineering . . . . .	0.3	2.4	—	1.8
Electrical engineering . . . . .	17.9	28.5	2.9	17.2
Aircraft . . . . .	4.4	10.9	0.5	2.0
Wool and cotton textiles . . . . .	0.9	0.4	2.4	1.9
Artificial textiles . . . . .	4.0	0.6	2.7	2.5
Other textiles and clothing . . . . .	4.0	1.0	1.3	2.1
Food, drink and tobacco . . . . .	6.8	1.8	18.1	8.8
Wood, cork, paper and printing . . . . .	2.6	1.3	2.1	4.6
Other manufacturing (rubber, plastic, sports goods, films, etc.) . . . . .	4.9	1.3	1.1	2.4
TOTAL . . . . .	100	100	100	100

Sources: Great Britain: *Scientific and Engineering Manpower in Great Britain*, Ministry of Labour; Netherlands: *12e Volkstelling*, annex woning telling 31 Mai 1947, Series A, Vol. 5.

in the various industrial branches (Table 6). Scientists are highly concentrated in the chemical industries; but, apart from this, the table shows—at least for Great Britain—a more even distribution of scientists over the several industrial sectors than is the case for engineers. The number of scientists is important not only in new industries such as plastics and artificial fibres, but also in food and textiles, where their number has probably increased in recent years with the introduction of new technical processes. On the whole, it would be expected that in countries with a diversified and complex industrial structure and a broad variety of modern consumers' goods industries, the ratio of scientists to engineers would be higher than in countries which concentrate more on basic industries. Incidentally, this may explain the particularly big effort made to increase the supply of engineers in eastern European countries.

#### Research

Statistics relating to research work are particularly poor and fragmentary, partly owing to the difficulty

of clearly distinguishing between higher teaching, basic research, applied research and work in connexion with current production.<sup>9</sup> The data for the United States and the United Kingdom given in Table 7 show that the larger part of the research work is performed by industry, but in both countries industry finances only a part of its own research activity. The share of total expenditure for research financed by the Government is 52 per cent in the United States and 74 per cent in the United Kingdom. It can also be seen that research work is highly concentrated in a few industrial sectors, notably electrical equipment, aircraft and chemicals. As already mentioned, industrial research work often requires a financial basis and technical apparatus which can be provided by big enterprises only. It is therefore not surprising to find that in the United States the companies with 5,000 or more employees perform over 70 per cent of the research and development work, while they account for only

<sup>9</sup> See *L'Organisation de la recherche appliquée en Europe, aux Etats-Unis et au Canada*, OEEC, Paris 1954.

TABLE 7

Applied research : Expenditure and employment (excluding atomic research)

	Expenditure for research			Persons engaged in research and development		
	Work performed		Source of funds	Total	Scientists and engineers	Scientists and research engineers as percentage of total engineers and scientists engaged in industry
	Millions of national currencies	Percentage of total expenditure	Percentage of total expenditure	Thousands		
<b>United Kingdom</b>						
Industry . . . . .	185	57	20	133.5	32.0	45
of which :						
Aircraft . . . . .	90	28	..	31.2	..	79
Electrical Engineering . . . . .	32	10	..	31.3	..	58
Chemicals . . . . .	20	6	..	25.4	..	47
Engineering and shipbuilding . . . . .	13	4	..	13.8	..	26
Vehicles . . . . .	6	2	..	6.0	..	38
Government . . . . .	120	37	74	..	..	..
Other <sup>a</sup> . . . . .	20	6	6	..	..	..
Total . . . . .	325	100	100	..	..	..
<b>United States</b>						
Industry <sup>b</sup> . . . . .	3 700	71	44	400.0	157.0	28
of which :						
Electrical equipment . . . . .	778	15	6	..	28.8	47
Aircraft . . . . .	758	15	2	..	27.6	57
Chemicals . . . . .	361	7	7	..	21.5	34
Machinery . . . . .	319	6	5	..	16.3	27
Precision instruments . . . . .	172	3	2	..	9.1	48
Petroleum products and extraction . . . . .	146	3	3	..	6.8	18
Telecommunications and broadcasting . . . . .	113	2	1	..	3.7	13
Government . . . . .	1 000	19	52	..	16.6	..
Other <sup>a</sup> . . . . .	500	10	4	..	..	..
Total <sup>b</sup> . . . . .	5 200	100	100	..	..	..

Sources : United Kingdom : *The Economist*, 8 September 1956 ; United States : *Science and Engineering in American Industry*, National Science Foundation, and *Monthly Labor Review*, March 1956.

<sup>a</sup> Universities, foundations, research centres, etc.

<sup>b</sup> Including 150 million dollars which represents about 4 per cent spent on basic research.

40 per cent of the total number employed in manufacturing industry.<sup>10</sup>

The close connexion between research work and defence may help to explain the widespread apprehension in the United Kingdom that the amount of applied research performed is insufficient in spite of a high level of expenditure and in spite of the fact that no less than 45 per cent of all qualified scientists and engineers engaged in industry are employed on research work.<sup>11</sup>

<sup>10</sup> *Monthly Labor Review*, March 1956, p. 276.

<sup>11</sup> *The Economic Survey, 1957* (Cmnd. 113), states that "at the beginning of 1956 about half of all those engaged on scientific research in manufacturing industry were employed in the two industries—aircraft and electrical engineering (of which electronics form a part)—in which defence research has been particularly concentrated". The recent White Paper on national defence mentions a forthcoming curtailment of the military research and development programme by which scientists and technicians will be released to industry (see *Defence, Outline of Future Policy*, Cmnd. 124, April 1957).

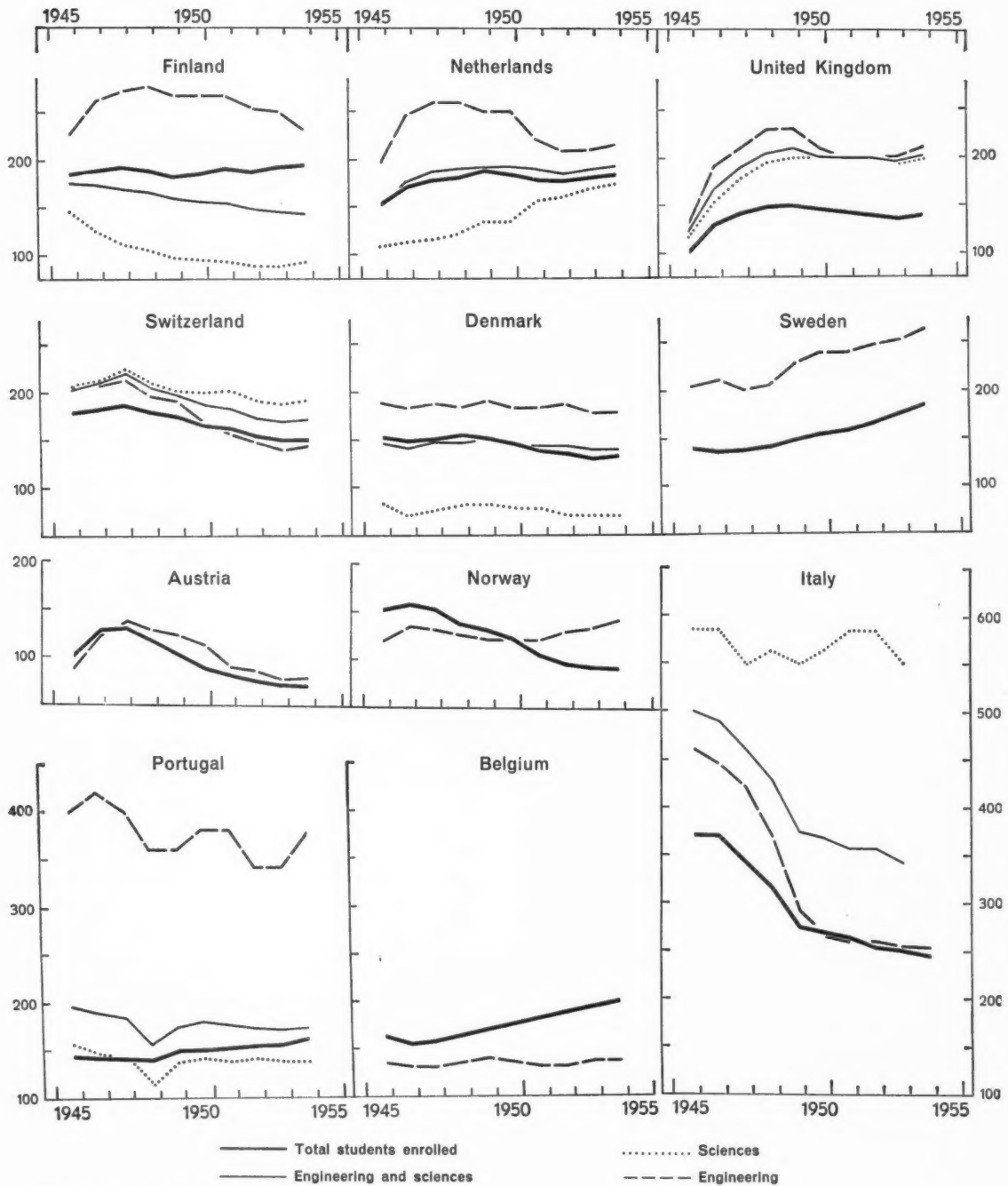
No comprehensive and comparable data are available for continental western European countries.<sup>12</sup> Many of these countries may find themselves in a less favourable position owing to the predominance of small-scale enterprises; but, on the other hand, less emphasis is laid on research work for defence purposes. The absence of research for defence may help to explain the low contribution of the Government to research performed in western German industry (3 per cent), as well as the fact that there are few complaints in that country about insufficient resources being devoted to research.

<sup>12</sup> In France, total expenditure for research is estimated at some 100 billion francs, of which 50 to 60 per cent are financed by the Government. About 10,000 engineers are engaged on research work (see *Le Monde*, 28 March 1957). In western Germany, total expenditure on research is estimated at 800 million DM., of which 500 million DM. worth of work is performed by industry. (See H. Gross: *Wirtschaftswichtige Forschung und Wissenschaftsfinanzierung in Deutschland und den USA*, Kiel, 1955.)

CHART 1

Total university enrolments and enrolments in technical faculties

Index numbers — 1930/31 = 100 <sup>a</sup>



Sources and methods: See "Notes to the statistics".

<sup>a</sup> Index numbers of students enrolled per million of total population.

TABLE 8  
Total numbers of graduates and graduates in technology and sciences

Country	Year	Total all faculties		Technology		Sciences		First graduates		
		1st graduates	2nd graduates	1st graduates	2nd graduates	1st graduates	2nd graduates	Total all faculties	Techno-logy	Sciences
								Per million of total population	Percentage of total 1st graduates	
Austria . . . . .	1934/35	2 528	..	..	70	..	..	374	..	..
	1950/51	3 635	356	595	123	..	..	524	16	..
	1954/55	2 312	230	442	107	..	..	332	19	..
Belgium . . . . .	1937/38	1 197	224	174	..	142	78	143	15	12
	1950/51	3 571	254	440	12	265	72	410	12	7
	1954/55	3 848	308	437	17	369	57	437	11	10
Denmark . . . . .	1937/38	1 162	32	161	..	34	..	313	14	3
	1950/51	1 874	46	321	7	40	..	437	17	2
	1954/55	1 815	52	332	5	53	..	410	18	3
Finland . . . . .	1950/51	2 697	74	327	2	108	11	663	12	4
	1954/55	3 208	152	270	11	170	25	755	8	5
France . . . . .	1937/38	11 724	598	1 974	..	794	102	279	17	7
	1954/55	17 279	584	3 622	..	1 594	242	403	21	9
Western Germany <sup>a</sup> . . . . .	1937/38	15 257	3 985	2 039	..	320	563	221	13	2
	1950/51	18 451	7 623	2 816	243	1 197	986	370	15	6
	1954/55	17 971	7 301	3 399	322	1 323	1 220	346	19	7
Great Britain . . . . .	1950/51	24 441	2 410	3 175	306	4 474	895	500	13	18
	1954/55	23 524	2 701	2 760	386	4 564	1 097	475	12	19
Ireland . . . . .	1937/38	1 116	260	54	2	119	25	376	5	11
	1950/51	1 662	167	167	5	224	43	561	10	13
	1952/53	1 577	155	163	5	154	38	533	10	10
Italy . . . . .	1937/38	11 909	—	1 013	—	649	—	276	9	5
	1950/51	19 724	—	2 201	—	2 172	—	418	11	11
	1952/53	20 058	—	2 261	—	2 258	—	423	11	11
Netherlands . . . . .	1937/38	1 833	..	224	..	259	..	212	13	14
	1950/51	2 906	..	666	..	285	..	285	23	10
	1953/54	3 238	..	603	..	378	..	303	19	12
Norway . . . . .	1937/38	728	..	126	..	27	..	249	17	4
	1950/51	1 275	..	222	..	75	..	385	17	6
	1954/55	949	..	234	..	70	..	278	25	7
Portugal . . . . .	1937/38	801	—	76	—	45	—	104	9	6
	1950/51	1 217	—	264	—	151	—	144	22	12
	1954/55	1 131	—	225	—	192	—	129	20	17
Spain . . . . .	1954/55	6 167	..	417	..	602	..	214	7	10
Sweden . . . . .	1954/55	2 868	..	531	..	335	99	396	19	12
Switzerland . . . . .	1950/51	1 206	1 050	476	113	53	128	186	39	4
	1954/55	1 010	1 049	281	107	55	133	148	28	5
Yugoslavia . . . . .	1938/39	2 745	..	379	..	..	..	177	14	..
	1950/51	5 663	..	776	..	336	..	344	14	6
	1954/55	7 972	..	1 424	..	574	..	454	18	7
Eastern Germany . . . . .	1938	2 304	..	256	..	..	..	253	11	..
	1954/55	4 780	..	392	..	515	..	266	8	11
Hungary . . . . .	1950/51	5 174	..	1 252	..	..	..	547	24	..
	1954/55	5 644	..	848	..	..	..	579	15	..
Poland . . . . .	1947/48	4 293	..	691	..	..	..	175	16	..
	1954/55	22 336	..	9 858	..	1 107	..	827	44	5
U.S.S.R. . . . .	1950/51	176 900	..	..	..	..	..	900 *	..	..
	1954/55	245 800	..	60 000 *	..	..	..	1 228	24 *	..
United States . . . . .	1939/40	186 500	26 731	15 100	..	..	..	1 429	8	..
	1951/52	331 924	63 587	42 000	4 825	32 801	12 275	2 133	13	10
	1953/54	292 880	56 823	22 329	4 204	24 044	4 867	1 789	8	8

Sources and methods: See "Notes to the statistics".

<sup>a</sup> Whole of Germany for pre-war.

*The Output of University-trained Engineers and Scientists*

In all countries for which information is available (Austria excepted), the total number of persons enrolled in universities and the number of university graduates have increased substantially since pre-war years (see Chart 1 and Table 8). The increase in relation to the expansion in the total population has been most pronounced in Belgium, Yugoslavia, western Germany and Italy. The huge increase in Yugoslavia is part of the general development effort after the war, while the big expansion in Belgium probably reflects the fact that before the war this country had a particularly low ratio of students to total population.

The table further shows that the proportion of engineers and scientists to the total of university graduates increased in all countries for which pre-war figures are available, with the exception of Belgium, where the increase in enrolments in scientific and technological faculties, although substantial, was at a slightly lower rate than for other disciplines.

Table 8 also shows, as would be expected, that the ratio of new engineers to the total population tends to be higher in the most industrialized countries. There are, however, several exceptions to this. Yugoslavia shows a very high figure, while, on the other hand, the Belgian ratio is not much higher than that of Italy. In Great Britain, too, the ratio appears to be rather low. The figure for Norway which is already fairly high would be more than doubled if Norwegians graduating from foreign universities were added. These differences are due to both institutional and economic factors, whose importance is difficult to assess. Differences in the facilities available for non-university training seem to play an important role: both Belgium and the United Kingdom are among the countries where the system of part-time courses is particularly well developed and the recruitment of qualified technicians is on a relatively high level.

One broad conclusion suggested by the figures in Table 8 is that in most western European countries the present number of students graduating in technology is too low. This is also brought out by the figures in Table 9, giving the ratios of graduates to the existing stock of engineers. This ratio exceeds 5 per cent only in the case of the Netherlands, Sweden, Portugal and Greece. In the two last-mentioned countries, this ratio cannot even be considered as high, in view of the present low number of engineers and the rather ambitious industrialization programmes.

TABLE 9  
New graduates in technology as percentage  
of active engineers

Country	1951	1955
Austria . . . . .	4.7	3.5
Belgium . . . . .	4.4	4.4
Denmark . . . . .	4.9	5.0
Finland . . . . .	5.2	4.3
France . . . . .	3.0	3.6
Great Britain . . . . .	4.0	3.5
Greece . . . . .	8.6	6.6
Italy . . . . .	4.1	4.2
Netherlands . . . . .	10.1	9.1
Norway . . . . .	3.1	3.2
Portugal . . . . .	7.5	6.4
Sweden . . . . .	..	5.5
United States . . . . .	8.0	..

Sources and methods: See "Notes to the statistics".

The annual number of university graduates which would maintain the stock of engineers and scientists at the present level cannot be precisely measured, since no information is available on retirement practices or shifts of scientists and engineers into other fields. In the absence of such data, the annual replacement needs for engineers and scientists might be tentatively put at 3 to 4 per cent.<sup>13</sup> Thus, the current flow of new graduates in technology would in most countries leave little or no room for a net increase in the numbers in active work.

Domestic universities and technological institutes are not the only source for highly qualified technical manpower. As has just been mentioned, a large share of Norwegian engineers are trained abroad. In the United Kingdom, on the other hand, non-university channels for the training of engineers are of importance. Indeed, of the forecast annual flow of 5,000 new engineers (in the broader sense), it is expected that 40 to 50 per cent will be trained in part-time courses and receive Higher National Certificates, Higher National Diplomas, etc. Most countries, however, have no such elastic training system; nor can much hope be placed on recruitment from universities abroad, especially as far as the major countries are concerned. In France, the present output of universities seems to make possible an annual increase of the stock of engineers of less than 1 per cent, as against an estimated need for 3 per cent

<sup>13</sup> "Etude globale des cadres supérieurs scientifiques et des techniciens dans l'économie," *Revue française du travail*, No. 3, Paris, 1956, p. 34.

annually;<sup>14</sup> the situation is not likely to improve before 1960 even if urgent measures are adopted. The position is hardly more satisfactory in many other western European countries. Among those countries for which forecasts have been made, Denmark seems to be the only one where future supply may even exceed future demand.

The present flow of engineers from universities and equivalent institutions thus seems inadequate even for maintaining the current rate of economic growth; *a fortiori*, it is insufficient to meet the requirements of far-reaching technological innovations. The solution to the present and future shortage of engineers depends on an increase of the present flow of young graduates and, probably to an even larger extent, on a more elastic system of training for technical manpower.

The situation is somewhat different with regard to scientists. In most countries, the ratio of graduating scientists to the existing stock is far higher than the corresponding figure for engineers. In some countries, such as Italy, France and Austria, a surplus of scientists might well appear as a result of inadequate appropriations for education; but, on the whole, there seems to be little doubt that jobs will easily be found for the increasing flow of scientists in coming years, given the acute shortages of teachers of scientific and technical subjects in secondary schools and universities.

#### *Some Comparisons with Eastern European Countries and the Soviet Union*

Despite the lack of fully comparable data, it seems fairly certain that the Soviet Union and the more industrially developed eastern European countries (Czechoslovakia, eastern Germany, Poland and Hungary) are at an advantage compared with western European countries, with regard both to the present stock of engineers and technicians and to the rate at which it is expanding. But comparisons of sheer numbers may be misleading. In the planned economies of eastern Europe it is more usual than in western Europe for engineers to perform management functions. Moreover, the centralized apparatus of planning requires the services of numerous technically trained persons; and, other things being equal, this lowers the ratio of engineers and technicians to total employees in the production process proper.<sup>15</sup> One of the objectives of the recently launched decentralization policy in the Soviet Union is to release a large part

of the highly skilled technical personnel now in administrative posts.

While Soviet engineers and technicians are probably not less well qualified than their western counterparts, the question of quality undoubtedly arises in comparisons between eastern European and western European countries. In most of eastern Europe the need to make up for war losses in technical manpower, and the tempo of industrialization during the last decade, often led to the promotion to responsible technical posts of less than fully trained specialists, and overutilization of the capacity of the educational systems has often meant that quality was sacrificed to quantity. For instance, during the 3rd Congress of Polish Technology, which took place last February, it was said that "the quality of graduates is often poor; the number of teaching staff is insufficient, and the technical laboratories are inadequately equipped".<sup>16</sup> A special commission has been appointed by the Polish Ministry of Higher Education to work out a scheme for reducing the number of students and raising educational standards. Complaints about the inadequate standard of technical training have also been heard in Czechoslovakia,<sup>17</sup> where in contrast with the Polish situation there continues to be a shortage of university-trained engineers.<sup>18</sup>

The hasty building up of technical cadres, together with the effects of heavy losses inflicted on the intelligentsia during the war and the frequent removal after the war of pre-war trained personnel from responsible posts, has led to a striking lowering of the average age of engineers. In 1954, more than 60 per cent of all academic engineers in the engineering industry of Czechoslovakia had less than five years of working experience. In the enterprises of the Ministry of Heavy Engineering about 70 per cent of chief engineers had held their posts for less than three years.<sup>19</sup> On this score, too, the average qualification—largely dependent on experience—must be lower in eastern Europe than in either the Soviet Union or the western European countries.

<sup>16</sup> Professor Tymowski, *Trybuna Ludu*, 26 February 1957.

<sup>17</sup> See, for instance, the resolution of the Central Committee of the Communist Party, May 1957.

<sup>18</sup> It was recently stated that of all persons occupying posts as engineers in industrial enterprises only 22.6 per cent had high-school training, whereas 33.8 per cent had secondary technical school education and the remaining 43.6 per cent had no professional or semi-professional technical education whatsoever. *Podniková Organizace*, 31 January 1956. Cfr. the following quotation from *Pracovní Zálohy*, No. 22, 1956, Ministry of Manpower, Prague, p. 337: "Why are we speaking about science if 87 per cent of our directors and technicians in industry do not have the desired qualifications and if we cannot succeed in persuading the technicians to acquire a minimum of technical education."

<sup>19</sup> *Podniková Organizace*, No. 9, 1955, and No. 8, 1956.

<sup>14</sup> See Vermot-Gauchy, "Nos besoins en ingénieurs", *Bulletin SEDEIS*, 2nd part, Paris, 1 December 1956, p. 79.

<sup>15</sup> Only about 50 per cent of all Polish engineers are employed in plants and enterprises (*Trybuna Ludu*, 26 February 1957). This proportion seems to be only slightly higher in the Soviet Union and Hungary.

## 3. DEMAND PROSPECTS

*The Main Factors of Future Demand*

The development of demand for highly qualified technical manpower, as a whole and in its several components, depends upon a variety of economic and technical factors, such as the rate of economic expansion in the individual industries, the process of mechanization and technological innovations (in particular, automation), changes in the size of enterprises, and employment possibilities in European countries, as well as in non-European under-developed countries. Although the direction of some of these changes can be gauged with reasonable certainty, their quantitative impact and the cumulative effect of their interdependence cannot possibly be measured with any accuracy. Nevertheless, in a few countries rough estimates have been made of the probable trend of demand in the near future. These forecasts are obviously relevant only within the limits of their highly simplified assumptions, but they may nevertheless give a rough indication of the order of magnitude of the problems involved. Before these estimates are reviewed, it may be useful briefly to consider the main factors at work.

Any forecast about requirements for engineers and scientists has, of course, to be based on certain assumptions about the future increase in national income and the level of economic activity. There is, however, no

firm basis for gauging the ratio between the future increase in economic activity and the increase in requirements for technical manpower. In some countries the forecasts are based on the assumption that requirements for engineers and scientists will increase at the same rate as, or even at a lower rate than, total production; but it is always emphasized that the results thus obtained should be considered as minimum requirements. This qualification seems to be supported by past experience. As can be seen from Table 10, the increase in enrolments in faculties of technology over the past 25 years has been of the same order as, or higher than, the expansion in industrial production.<sup>20</sup> Norway is the only clear exception to this rule, but this can be fully explained by the fact that the number of Norwegian engineers trained abroad has increased sharply over the period studied. Enrolments in faculties of technology have grown faster than industrial production in Italy, and, generally, in countries lagging behind in economic expansion such as Greece and Portugal, while in the United Kingdom, France and, as far as can be judged, also in western Germany, enrolments and industrial output have increased at strikingly similar rates. This seems to suggest that a rate of increase of future requirements for engineers roughly corresponding to that for total production would be a reasonable assumption for the industrially advanced countries of western Europe, if no major technological innovations were to be expected, while it would appear to be inadequate for less developed countries. This type of forecast does not of course allow for the increase required to eliminate any present shortage.

Such simple projections into the future of the experiences of past decades are obviously of limited use as a guide for policy. In some cases, the forecasts have been somewhat refined by the assumption that in future the increase in demand for scientists, engineers and technicians will be smaller, as compared with the increment in production, than in the past. Even this qualification, however, is presented as an extrapolation of a tendency already under way.<sup>21</sup> All forecasts, on the other hand, emphasize the possibility that future technological innovation will imply changes in

TABLE 10  
Industrial production and enrolments  
in technical faculties

*Index-numbers*

Country	Industrial output		Enrolments 1930-1931 = 100			
	1928-1931 = 100		Engineers		Scientists	
	1949	1954	1949/50	1954/55	1949/50	1954/55
Austria . . . . .	135	178	128	86	..	..
Belgium . . . . .	123	151	153	153	..	..
Denmark . . . . .	192	225	227	225	106	87
Finland . . . . .	235	339	304	278	110	108
Italy . . . . .	134	218	340	304 <sup>a</sup>	631	649 <sup>a</sup>
Ireland . . . . .	200	260	297	342 <sup>a</sup>	..	..
Netherlands . . . .	152	219	318	290	173	236
Norway . . . . .	200	270	143	174	..	..
Sweden . . . . .	246	283	260	306	..	..
United Kingdom	182	227	261	243	215	217

Sources and methods: See "Notes to the statistics".  
<sup>a</sup> 1953/54.

<sup>20</sup> Figures for enrolments were used because, for most countries, data on new graduates are available only for recent years. The figures include foreign as well as national students. Data on students of science are available only for a few countries. They show that the expansion of enrolments has been smaller than the growth in industrial production, Italy being the main exception.

<sup>21</sup> See, for instance, M. Vermot-Gauchy, "Nos besoins en ingénieurs", *op. cit.*

the demand for technical manpower more or less drastically different from past trends.<sup>22</sup> The main question in this connexion is, of course, that of the consequences of automation. There seems to be fairly general agreement that automation will increase the need for scientists, engineers and technicians, and that probably it will more than offset other factors operating in the opposite direction. But it is also recognized that it would be hazardous to try to quantify this crude evaluation.

In public discussions the advent of automation has often been associated with the expectation of a dramatic fall in total industrial employment. The careful examination to which the problem has been recently subjected suggests, however, that provided that global production continues to expand, the problem of technological unemployment resulting from automation is likely to remain of easily manageable proportions.<sup>23</sup> Indeed, most observers expect that automation will spread only very gradually, not so much because of deliberate government policies as for technical and economic reasons.<sup>24</sup> Moreover, even in those factories and commercial establishments where automatic processes are introduced in the near future, they will probably be limited to certain sectors.<sup>25</sup>

In these circumstances it is understandable that there are no fears that the introduction of automatic processes will entail the danger of a redundancy of scientists, engineers and technicians. The expectation is rather that it will accentuate shortages. So far, the introduction of automatic processes, if it has sometimes brought about a redundancy of workers, has never been accompanied by dismissals of highly qualified

technical workers. On the contrary, shortage of such manpower has often been mentioned as one of the reasons for a delay in the introduction of automatic processes. It must be stressed, however, that this conclusion is not based on precise calculations of the need for technical and scientific manpower per unit of product in an automatic factory. The time is not yet ripe for such calculations; and they would run the risk of being misleading, since they would grasp only one factor in a more complex reality. The conclusion just referred to is, so to say, a "synthetic" judgement, and it is difficult to isolate its different component parts—namely, the requirements for highly skilled manpower in the automatic factory, those due to the construction of automatic equipment, and those emerging with the creation of new industries and new tasks for engineers, scientists and technicians, etc. In particular, it is difficult to distinguish clearly between the requirements for the period of transition and the requirements in a fully automatic industry or enterprise.

Whatever may be the effect of automation on the total requirements for highly skilled technical manpower, its composition is likely to be affected: the relative importance of different categories of technicians will change, and new skills will be required of each of them. Moreover, it is likely that automation, no less than other developments involving more complex techniques of production, will increase the need for scientists and technologists in management and research, because technical considerations affect an increasing number of policy decisions on investment and on the current operation of a plant.<sup>26</sup> Indeed, the introduction of automatic processes will tend to make the distinction between managerial and technical functions less clear-cut. This, in turn, gives rise to complex problems in the training of engineers and scientists, especially as regards the degree of specialization of curricula, which will be

<sup>22</sup> See, for instance, the forecasts worked out in the United Kingdom and Norway.

<sup>23</sup> See, for instance, *Automation*, Department of Scientific and Industrial Research, London, 1956, p. 65. "So far as individual firms are concerned, automation has rarely caused workers to be dismissed, though it very often leads to substantial savings in operative labour. . . . Usually those firms that are likely to introduce automation can readily absorb displaced workers for two reasons. In the first place, they will probably be large firms, which can transfer displaced workers to other departments or, if this is not possible, adjust the rate at which the natural wastage of labour is made good. Secondly, automation is making most headway in industries with expanding output, such as electronic equipment, motor vehicles, chemical products and petroleum. Because labour is scarce, labour-saving methods often provide the only way of expanding production."

See also *Automation and Technological Change*, Report of the Sub-Committee on Economic Stabilization to the Joint Committee on the Economic Report, Congress of the United States, 84th Congress, 1st Session, Washington, D.C., 1955, p. 7; and *Vues sur l'automatisme*, Projet A.E.P., Agence européenne de Productivité, N.360, France—III, p. 40.

<sup>24</sup> See, for instance, I. Svernilson, "Economic and Social Problems of Automation", in *EPA Bulletin*, Automation Number, June 1956, p. 7.

<sup>25</sup> See *Automation and Technological Change*, *op. cit.* p. 7.

<sup>26</sup> The tendency for engineers and scientists to be drawn into management seems to be already apparent. In the United States the percentage distribution of engineers according to their functions was as follows in 1946:

	Mechanical engineers	Civil engineers	Electrical engineers
Administration and management . . . . .	34.3	47.5	31.9
Consulting . . . . .	5.7	8.4	5.7
Design, development and research . . . . .	10.2	7.6	38.3
Operations . . . . .	39.0	29.6	12.2
Sales . . . . .	5.7	1.2	6.3
Other . . . . .	5.1	5.7	5.6

Only scattered information is available for European countries. It appears, however, that there is no big share of engineers in top positions. In the United Kingdom, for instance, no more than 10 per cent of total active engineers are employers or managers; the corresponding proportion for the Netherlands seems to be of the same order.

briefly discussed in a later section of this article. It may be thought that this broadening of the functions of engineers into fields outside the purely technical would tend to accentuate the shortage still more. On the other hand, the prospect that technicians will be increasingly channelled towards managerial posts must be expected to lend support to policies aiming at increasing the flow of students to technical faculties.

It is particularly difficult to foresee the changes brought about by automation in that intermediate field which may be loosely defined as lying between management proper and the work of supervisors and foremen. It has been recently observed <sup>27</sup> that automation will bring about "an encroachment of technical matters on administrative work", and that consequently, side by side with the traditional administrative officer and the technician, a new type of official will be required, whose functions will embrace elements of both. At a lower operative level, another and

perhaps even more important change seems likely to take place. Not only will the number of maintenance workers increase sharply, at the expense of production workers, but they will also need additional training, corresponding to the increased complexity of the machinery. Looked at from a slightly different point of view, these changes will also tend to make the distinction between manual and non-manual workers less sharp.

The future level of activity and the prospective technological changes, as discussed above, are the main factors determining the total future requirements for engineers and scientists. The rate of new recruitment necessary to meet this demand is further determined by the age composition of the existing stock of engineers. As can be seen from Table 11, the average age of scientists is lower than that of engineers, while the ratio of new graduates to the existing stock is also substantially higher in science than in technology. The age distribution of French engineers is less favourable than appears from the table, because the

TABLE 11  
Age distribution of engineers and scientists  
Percentages

Country	Below 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 & over
<i>Austria (1951)</i>										
Engineers and technicians . . .	— 26 —		— 49 —				— 17 —		5	3
<i>Belgium (1947)</i>										
Engineers . . . . .	4	10	9	12	14	13	8	9	9	12
Scientists . . . . .	8	23	15	15	11	10	6	4	3	7
<i>England and Wales (1951)</i>										
Engineers and technicians . . .	15	15	13	— 15 —		— 18 —		6	4	4
<i>Finland (1950)</i>										
Engineers . . . . .	4	— 43 —		— 27 —		— 17 —		4	3	3
<i>France (1954)</i>										
Engineers . . . . .	3	— 37 —		— 20 —		— 24 —		— 13 —		3
<i>Western Germany (1950)</i>										
Engineers and technicians . . .	4	10	9	14	17	17	12	8	6	3
<i>Netherlands (1947)</i>										
Engineers . . . . .		— 38 —			— 30 —		— 28 —			4
Scientists . . . . .		— 52 —			— 28 —		— 17 —			3
<i>Norway (1956)</i>										
Engineers . . . . .	—	9	16	15	12	10	8	8	8	14
<i>Portugal (1950)</i>										
Engineers . . . . .	3	22	20	16	9	8	8	7	4	3
<i>United States (1950)</i>										
Engineers . . . . .	6	— 35 —		— 27 —				32		
Scientists . . . . .	12	— 39 —		— 26 —				23		

Sources and methods: See "Notes to the statistics".

figures exclude a considerable number of engineers in higher age groups performing managerial functions. In Norway, and still more so in the Netherlands and Portugal, the proportion of engineers in younger age groups is relatively high. The data for England and Wales, western Germany and Austria, which are taken from population censuses and include engineers without university or equivalent training, are not strictly comparable with those for other countries. They show a more marked predominance of engineers and technicians in higher age groups in western Germany and Austria than in England and Wales.

### *Some Estimates of Future Requirements*

As mentioned above, attempts to forecast future requirements of engineers and scientists have been made only in a few countries—namely, the United Kingdom, France, Norway, Denmark, Yugoslavia and the Netherlands. A common feature of these prognoses is that they take no account of possible changes in the industrial set-up resulting from automation and other technical innovations. In the absence of any reliable criterion by which to measure the effect of these changes on requirements of highly skilled manpower, the forecasts have been obtained by extrapolating past trends. The results are therefore conservative, and this is openly admitted in the British report which states that its purpose is to indicate a minimum level.

The Norwegian forecasts are based on the assumption that requirements for engineers will be increasing at the rate experienced since 1910, or by 3.4 per cent a year. The number required for replacement each year has also been estimated with fair precision (2 per cent of the present stock) and, together with the net increase in the total number of engineers to be recruited per year, should amount to 400 from 1955 to 1960, and 530 from 1965 to 1970.

Danish forecasts have been made on the basis of three different hypotheses about the ratio of engineers to total manpower—namely, (1) that it will remain at the 1953 level, (2) that it will be 10 per cent above the 1953 level in 1960, 17 per cent in 1965 and 25 per cent in 1970, and (3) that the increase in the ratio will be in the order of 20, 36 and 50 per cent for the three years. The following increases in requirements for engineers employed in Denmark were obtained (percentage annual increase):

	First hypothesis	Second hypothesis	Third hypothesis
1953-1960 . . . .	1.7	3.2	4.4
1960-1965 . . . .	1.3	2.8	3.9
1965-1970 . . . .	0.8	2.0	2.8
1953-1970 . . . .	1.1	2.7	3.8

In the United Kingdom, the forecasts refer to the years 1959 and 1970. Those for 1959 are based on evaluations by employers in industry and other interested bodies, and show a required increase over the period 1956 to 1959 of 18.5 per cent for scientists and 30 per cent for engineers. On the other hand, it is expected that the ordinary increase in the stock of scientists and engineers in industry will correspond to the increase in industrial production, which has been put at 4 per cent a year. The difference between the employers' forecast for 1959 and the ordinary increase is considered as the present shortage.<sup>28</sup> The long-term forecast envisages an annual increase in industrial requirements by 4 per cent from 1959 to 1970, on the hypothesis that the present shortage will have been eliminated by 1959; for other sectors, independent calculations have been made which indicate an increase in the number of scientists and engineers by more than 60 per cent of their present number.

A number of forecasts, based on different assumptions, have been made for France. One report<sup>29</sup> estimates that industrial production will increase by 6 per cent per year over the next few years, and that the demand for engineers will increase at a rate equal to 45 per cent of the rate of expansion in production. With due allowance for the need to eliminate the already existing shortage, the report concludes that the number of engineers will have to increase at an annual rate of 3 per cent. Another report<sup>30</sup> assumes that the demand for engineers and for highly qualified technical manpower in general will rise *pari passu* with the increase of productivity (estimated at about 3 per cent per year). This would be more than can be met, even if immediate measures were taken to increase supply. Only from the year 1962 could the stock of engineers increase by about 5 per cent per year and, according to this forecast, a situation of equilibrium could be expected only towards the year 1970. Still another estimate<sup>31</sup> starts from the assumption that production will rise by 5 per cent annually over the next few years, and that this by itself—i.e., without further structural changes—will require an increase in the number of engineers of at least 5 per cent and at most 20 per cent

<sup>28</sup> See footnote 3, p. 42.

<sup>29</sup> M. Vermot-Gauchy, "Nos besoins en ingénieurs", *op. cit.* At the end of his study (2nd part, p. 85) the author stresses the very great variations between the different forecasts that have been made in France. In fact, the requirements for engineers in 1960 have on various occasions been estimated at 100 per cent, 25 per cent and 4 per cent higher than the present level.

<sup>30</sup> Report submitted by M. Longchambon to the Conseil supérieur de la recherche scientifique, 28 March 1957.

<sup>31</sup> "Besoins de la France en ingénieurs", in *Responsables*, June 1956, p. 19 ff.

for the next 10-year period as a whole. Further assumptions are made in order to allow for new functions likely to be performed by engineers and scientists, and for the emergence of new industries. The result is that over the 10-year period the number of engineers needs to increase by 19 per cent according to the lower hypothesis, and by as much as 80 per cent according to the higher hypothesis.<sup>32</sup>

A recent inquiry in Yugoslavia shows present shortages and prospective requirements as follows:<sup>33</sup>

	Engineers	Technicians
Number employed in industry,		
1 December 1956 . . . . .	5 705	16 718
Estimated shortage, 1 December 1956 . . . . .	1 708	2 316
Estimated requirements, end 1961 . . . . .	13 955	35 792

<sup>32</sup> In an article published in *La Revue française du travail* (« Les perspectives d'emploi dans les carrières scientifiques et techniques en France »), No. 3, 1956, p. 33 ff., the shortage of engineers and scientists has been calculated on the basis of a comparison between the ratio of engineers to total manpower in the United States and in France. The shortage obtained

Thus, in order to cover requirements by 1961, the numbers of engineers and technicians would have to increase by about 20 and 16 per cent annually—i.e., at a much faster rate than can be expected for industrial output.

Finally, in the Netherlands a forecast has been made of the requirements until 1970 for engineers in chemical industries, where the shortage of highly qualified manpower is most acutely felt; the necessary annual increase is put at 4½ per cent.

As already mentioned, the various forecasts briefly discussed above are probably rather conservative; but the current output of engineers in most western European countries seems inadequate even to meet these requirements.

in this way is, of course, enormous—more than 120,000 engineers, a figure which exceeds the present stock of active French engineers.

<sup>33</sup> See *Privredni Pregled*, 24 April 1957.

#### 4. FACTORS OF SUPPLY

##### *The Capacity of Educational Facilities*

The mere fact that it takes several years to produce an engineer means that, even if the capacity of educational institutions is sufficient for an expansion of the number of students, new recruitment will always fall behind current requirements whenever there is a sharp increase in demand, such as has probably occurred in many fields of industrial technology in the recent past. However, this time-lag is far from being the only obstacle to an adaptation of supply to demand. In spite of the considerable expansion since the pre-war period in educational facilities in the field of science and technology the present capacity of universities and other institutions appears in many countries to be inadequate in relation to requirements in the next few years, and in some countries it is insufficient even to receive a number of students corresponding to the current demand for graduates. The importance of this deficiency varies from one country to another, and with the field and level of technological and scientific studies: it appears to be most pronounced and general in western Germany, France, Norway and Denmark.

The extent of the shortage of educational facilities might be determined by comparing the present capacity for recruitment either with the required level of recruitment as determined by demand, or with the number of persons with sufficient talent, desire and financial means to acquire an education in technology and science. However, it is difficult, on either defini-

tion, to give quantitative expression to the existing shortage. In particular, a comparison of the number of applications and admissions in the relevant educational institutions is a poor guide. In some countries, notably in southern Europe, there are no restrictions on the number of students admitted, and the shortage in educational facilities is felt mainly in the form of overcrowded classes and loss of time in waiting for admission to laboratory courses. In those countries, on the other hand, where the practice is to restrict entries, the number of applications may be inflated because students often apply for admission to several institutions in the hope of being admitted to one, or it may be deflated because students, well aware of the standard of matriculation entry, refrain from applying if they do not meet this standard. Data for Norway, which are free of duplication in so far as they refer to the country's only institution for the training of academic engineers, show that 92 per cent of the candidates applying for admission during the past five years had fully acceptable qualifications; but less than one-half of them could be admitted.<sup>34</sup> Similar information free of duplication exists for France: during recent years the *grandes écoles* have been able to admit only about 50 per cent of the number of candidates sitting for entrance examinations.<sup>35</sup>

<sup>34</sup> See "Om den videre utbygging av Norges tekniske høyskole", *St. meld.* No. 11, 1956.

<sup>35</sup> The available information for other countries is less significant. According to the Federation of German Engineers, only one-third of the 6,000 persons applying for entry into mechanical

The shortage in educational capacity in the field of technology and science takes the form partly of inadequate teaching space, laboratory equipment and other physical amenities, but above all of insufficient teaching personnel. The lack of teachers is particularly serious in western Germany, where the number of students per professor in technical institutions of university standing has doubled since 1938.<sup>36</sup> In the Scandinavian countries, on the other hand, the problem of insufficient teaching personnel appears to exist largely in schools below the university level.

The impact of entry restrictions on the number of graduates produced is to some extent offset by the fact that where restrictions are in force a relatively large proportion of the students eventually pass the final examinations. Thus, during the past ten years fully 90-95 per cent of students in the Norwegian Technological Institute completed their studies. The proportion of successful students is also very high in the technological institutes of the other Scandinavian countries (about 90 per cent) while the technological institutes in Zürich, Delft (the Netherlands) and Vienna, which have no restrictions on entry, estimate that some 25-30, 50 and 75 per cent respectively of students leave without having completed their studies.<sup>37</sup>

Another factor tending to lessen the impact of shortages in educational capacity on the level of recruitment of engineers and scientists is that in these disciplines it is relatively easy to arrange for training abroad if domestic facilities are inadequate.<sup>38</sup> However, this does not represent a fully corresponding

addition to the domestic supply of engineers, since those who are trained abroad are also particularly apt to take employment abroad once studies are completed.

By and large, most countries now recognize degrees from foreign technological institutes and universities at a level of equality with degrees granted by corresponding institutions at home, and in cases where examinations are necessary for full recognition they do not generally require considerable additional studies. In a number of countries, however, careers in public service are still closed to persons not possessing a degree from a domestic institution. The main obstacle to a further expansion in studying abroad is undoubtedly the higher cost involved for the student and, in some cases, the difficulty of obtaining foreign exchange.

As far as the lack of laboratories and other physical amenities is concerned, the capacity problem can be solved by raising budgetary grants. By contrast, a rapid increase in the teaching staff cannot easily be effected without lowering standards. The main requirement for speeding up the expansion of the teaching staff appears to be a greater flexibility for occupational transfers among the three broad groups of qualified technical manpower—i.e., teaching, research and otherwise active engineers and scientists. There seems to be considerable scope for transfers from the research group to teaching on the basis of part-time work, provided that the teaching profession does not take a restrictive attitude against it. Where the element of practical specialization is important, engineers engaged in industry can similarly be drawn into teaching as a part-time occupation. Technical colleges in the United Kingdom have successfully developed such co-operation with industry,<sup>39</sup> and in France the Institut des Sciences Appliquées to be opened in Lyons will have a large contribution of teaching personnel drawn from industry.

There may also be some scope for easing the burden on professors by providing more auxiliary personnel and by relieving them of administrative duties. However, such measures are only palliatives, and the solution of the longer run problem of increasing the number of teachers in technical schools will depend on an improvement of teachers' pay in relation to salaries of engineers and scientists active in other occupations.<sup>40</sup>

and electrical faculties of technological institutes in western Germany in the summer of 1955 could be admitted. Other faculties, and in particular chemistry, had to refuse half of the applicants. In Denmark, only about 60 per cent of applicants to technological institutes of university standing could be admitted in 1956, and in Sweden the corresponding proportion has been about two-thirds in recent years.

<sup>36</sup> The same is true of faculties of chemistry in the Netherlands during the period 1923 to 1947. See "Toekomstige Werkgelegenheid voor een aanbod van academisch gevormde chemici", *Overdrukken* No. 47, Centraal Planbureau, Dec. 1955.

<sup>37</sup> The data are taken from "Prognose over behoeft for sivilingenjører", *Norges Teknisk-Naturvitenskapelige Forskningsråd*, Oslo, May 1956. The Österreichisches Institut für Wirtschaftsforschung estimates that about one-third of students commencing their studies at the Vienna institute in 1949/50 obtained degrees. (Source: "Der technische und naturwissenschaftliche Nachwuchs in Österreich", *Monatsberichte des österreichischen Institutes für Wirtschaftsforschung*, Beilage Nr. 45, April 1957).

<sup>38</sup> Thus, 44 per cent of the Norwegian engineers recruited during the past six years were trained in foreign universities and technological institutes of university standing. Similarly, a very large number of Norwegian technicians are trained abroad: the number of Norwegian students in Swedish technical schools alone is nearly of the same order (about one thousand) as enrolment in Norwegian technical schools. (Statement by E. Einarsen, Rector of Oslo Technical School, *Morgenbladet*, 27 March 1957.)

<sup>39</sup> There are at present some 9,500 full-time and about 40,000 part-time teachers in technical colleges in England and Wales. Most of the latter are drawn from industry and commerce on account of their special qualifications and experience. (*Technical Education*, Cmnd. 9703, February 1956.)

<sup>40</sup> The importance of this seems to be fully realized in the Soviet Union, where, according to a report on engineering education prepared by a visiting team of British engineers,

### The Cost of Education

While shortages of educational facilities are a factor of major importance restricting training in technology and science in only a few countries, there are in most countries more general defects of educational systems which stand in the way of an expansion of the numbers of highly qualified technical manpower.

First, and most obvious, is the question of financing the studies. With the possible exception of teachers, it is true that the cost of higher education—including income forgone during the years of study—is more than offset by the premium paid on higher education in terms of larger earnings later in life. But while the investment, in this sense, is undoubtedly profitable, the fact remains that its financing is beyond the means of most families. It may be worth mentioning that the mere provision of free education does not go far towards the democratization of higher education—i.e., the access on equal terms regardless of financial means. Indeed, when only few families can afford to forgo income during the years of study, the distributive effect of providing free education beyond the level of compulsory school is tantamount to that of a subsidy to the higher income brackets.<sup>41</sup>

Some progress has been made in recent years towards extending the numbers and importance of scholarships and interest-free study loans. But it is widely recognized that these programmes need to be carried much farther if the wastage of talent resulting from prohibitive costs of education is to be eliminated.<sup>42</sup> Scholarships granted for higher studies in France in institutions other than the *grandes écoles* have developed as follows:

Number of students receiving grants		
	Thousands	As percentage of total students
Average 1935-39 Total . . . . .	3.6	5.5
1956/57 Total . . . . .	27.1	18.0
of which :		
Sciences . . . . .	8.2	25.7
Law . . . . .	2.8	7.0
Letters . . . . .	6.8	16.4
Medicine and pharmacy	8.1	21.4

Source : Data received from the Bureau universitaire de statistique.

"engineering teaching is the highest-paid profession in Russia . . . Pre-requisites for academic staff include motor-cars, houses and holiday accommodation. They may retire at 60 for men and 55 for women and become entitled to 40 per cent of their salary as pension; the sum is added to their salaries if they choose to continue working. Academic staff may augment their already high salaries by 50 per cent by engaging on research work". (Source : *Birmingham Chamber of Commerce Journal*, 1 April 1957.)

<sup>41</sup> For a further development of this point, see Alfred Sauvy: *Théorie générale de la population*, Vol. II, Biologie sociale, p. 299 ff.

<sup>42</sup> In western Germany, only 9 per cent of students in univer-

Over the same period the average amount of scholarship grants increased by nearly one-third more than did the cost of living.

The cost aspect appears to be particularly important in the field of technology and science, by comparison with such disciplines as law and humanities, where there are no fees for laboratories and equipment and where generally a lighter study programme permits more extensive part-time work. An important exception is the British system of part-time training, which is based on a close integration of earning in industry and learning in technical colleges, allowing the financing of education through part-time employment. However, the recruitment of professional engineers under this system takes a long time and requires persons with physical fitness and perseverance.

### The Rigidities of Educational Systems

Quite apart from the question of opportunities for part-time work, the difficulty and the duration of studies in faculties of technology and science tend to limit the flow of students into these fields.<sup>43</sup> In fact, any big increase in numbers embarking on these studies is likely to result in some lowering of standards of education unless the period is to be further prolonged.<sup>44</sup> This is particularly true of countries where inadequate educational facilities at present involve keen competition for entry.

sities and institutions of equivalent standing in 1952/53 received full scholarship grants (voller Gebührenerlass); 11 per cent had grants covering part of their expenses; 26 per cent financed their studies through part-time work, the remainder financed them through rents, loans and pensions, or were financed by their parents. (*Wirtschaft und Statistik*, July 1954.) In faculties of technology in Austria, 18 per cent of students finance their studies through work. ("Der technische und naturwissenschaftliche Nachwuchs in Österreich", *op. cit.*)

<sup>43</sup> This is sharply criticized in respect of science studies in Norway, where the average age of graduates is as high as 30 years (see *Behovsanalyse for realister*, NTN's Komité for vitenskapelig personell, Oslo, 1955). In Denmark it is held that the pressure on technical schools in recent years has raised entrance requirements to such an extent that the duration of studies for non-academic engineers and technicians has become excessively long. It is proposed that the period be shortened (see *Ingeniøren* No. 19, 1955). Also in Austria the period of study for academic engineers is considered to be excessive and to constitute an important factor limiting the flow of young persons into the field of technology ("Der technische und naturwissenschaftliche Nachwuchs in Österreich", *op. cit.*).

<sup>44</sup> The democratization of higher education is one of the factors held responsible for the lengthening of the period of study in the Netherlands, where only 11 per cent of persons entering institutes of technology in the years 1948 to 1950 finished their studies for an academic engineer's degree within six years, while the corresponding proportion was 23 for the generation admitted in the years 1930 to 1933. See *Studieduur en Leefstijd bij afstuderen*, Centraal Planbureau, Overdrukken No. 48, Den Haag, 1957.

Such lowering of standards or shortening of the period of study, or both, would not necessarily be unwelcome. In many countries the standards for training of academic engineers may have been set without due regard to the needs of the economy. There seems to be only a limited demand (outside the field of research and teaching) for the very highly qualified type of technologist produced under these systems, and the result is that engineers frequently occupy posts for which they are over-qualified. It was seen in the first section of this article that the shortage of highly qualified technical manpower was often particularly serious as regards engineers just below the academic level and the qualified technicians, who are needed to take over some of the functions now performed by academic engineers.

This problem of over-qualification is closely connected with that of insufficient differentiation of levels of technical education. Especially in some Scandinavian countries, in southern Europe and in France, there is a need to bridge the wide gap between educational facilities on the academic level, on the one hand, and provision for the further technical training of skilled labour, on the other.<sup>45</sup> By contrast, western Germany and, even more, the United Kingdom have highly differentiated systems of technical education. Moreover, the educational systems in these countries suffer less <sup>46</sup> from those rigidities which characterize technical education in most countries of western Europe, such as formal scholastic or practical training requirements, and strictly observed age limits for the admission of students to technical institutions. Such rules not only limit the access to technical education in general, but also hinder the transfer of students from one field of specialization to another. A par-

ticularly serious result is that technical and scientific talent which comes to light at a relatively late stage in working life—as may often happen—may be wasted owing to the difficulties of arranging for systematic studies. Obviously, the solution of this problem depends not only on the relaxation of rules of admission but also on the provision of wages during studies.

The need for flexibility also concerns the systems of primary and secondary school education. Though a full discussion of these problems is outside the scope of the present article, two main points may be briefly mentioned. First, it is important that school systems should be flexible in the sense of leaving open until a relatively mature age the final choice as to the extent and nature of studies or vocational training to be pursued after the termination of compulsory school. It is desirable, moreover, that professional studies undertaken after compulsory school should be arranged in such a way as not to exclude the possibility of shifting to higher studies. These and other measures aiming at avoiding premature specialization would reduce wastage by enabling the most talented pupils to embark on higher studies and by enabling the others to have the most suitable combination of general school education and vocational training.

The problem of premature specialization seems to be particularly acute in the United Kingdom, where the first decision as to educational career has normally already to be made at the age of 11 years, when children are separated into grammar, technical and secondary modern schools. Exceptionally talented students in the secondary modern school may succeed in advancing to the university level, but in the normal case academic studies are closed except to graduates of grammar schools, which are the only schools with a curriculum suitable as a preparation for university training. In most other countries the decision whether or not to leave the door open to academic studies has to be taken only after the termination of compulsory education, when the child is aged 13 to 15. In some countries the choice of a specific field of academic studies may be put off for another couple of years, but most often the student preparing for a career in technology or science would have to allow a minimum of hours for subjects such as mathematics in his secondary school curriculum.

A further important problem is that of the curriculum in secondary schools, and especially of the balance between literary and scientific subjects. Few people are in favour of a very drastic change in the curricula followed in western European countries so as to give scientific subjects a weight comparable with what they have in the Soviet Union, but an increasing

<sup>45</sup> For changes in the present systems proposed in these countries see: for Sweden: *Tekniska Skolutbildningen*, Statens Offentliga Utredningar 1955: 21; for Norway: "Prognose over behovet for sivilingeniører", *op. cit.*, and *Morgenbladet*, 27 March 1957; for Denmark: *Ingeniøren*, No. 19, 1955.

In Denmark, for instance, there is practically no choice for persons wanting a higher technical education but (a) to attend the institute of technology for academic studies, where entries are limited to some 60-80 per cent of qualified applicants, or (b) to take a three-year course in "technicum", where admission requires up to four years' practical training and apprenticeship examination as well as, in practice, a middle-school degree (realeksamen).

<sup>46</sup> This may be less true of western Germany than of the United Kingdom. In its latest annual report the Deutscher Industrie- und Handelstag criticizes the unduly big differences in admission requirements, study syllabus and the length of study in technical colleges in western Germany. The need for a co-ordination of the educational programmes of these colleges, which are under the authority of the Länder, is emphasized. ("Feste Währung-Gesunde Wirtschaft", *Tätigkeitsbericht für 1956/57*, Deutscher Industrie- und Handelstag). This point was also stressed in the Bundestag debates on technical education in June 1955 (see "Verhandlungen des Deutschen Bundestages", *Stenographisch Berichte*, Band 30, Bonn, 1956).

number of scholastic authorities find that in the majority of western European countries young people leaving secondary school are insufficiently prepared for studies in technology and science. In Belgium, for instance, the entry into these fields normally requires one to two years of special studies in addition to the regular high school.<sup>47</sup> Even where no such additional studies are required, it is felt that there should be a greater emphasis on science and technical subjects in secondary schools in order to awaken the student's interest in careers in these fields.<sup>48</sup>

#### *Other Factors influencing the Choice of Career*

The defects of the educational system discussed above are undoubtedly the most important obstacles to an increase of the flow of young persons into the field of technology and science. In some cases, as with insufficient educational facilities or inadequate financing of studies, they block the student's way into these disciplines; in other cases—for instance when studies are too long or too difficult—the student is discouraged from embarking upon and pursuing a career in this field. Other factors, apart from purely personal inclination and aptitude, which play a role in the decision on a career as engineer or scientist are, on the one hand, the traditional prestige value of these professions and, on the other hand, expectations concerning the future, such as stability of employment, level of remuneration and opportunities for promotion.

The traditional inclination towards literature, philosophy, classical subjects and law has been strong in the past—not only in southern European countries. More recently, the higher social prestige attached to non-technical studies appears to have considerably weakened, and the predominance of non-science graduates still found in these countries (see Table 8) probably reflects such factors as lower study costs and lower intellectual requirements rather than preferences connected with social status. An inquiry made among some 4,000 French male high-school pupils in 1948/49 as to the type of higher studies they hoped to pursue

is instructive in this respect. The results are shown below, together with the actual distribution of male graduates by faculties in 1950.

	Faculty of preference <sup>a</sup>	Male graduates
	percentage	
Law . . . . .	11	20
Literature (letters) . . . . .	5	11
Sciences and engineering . . . . .	49	37
Medicine . . . . .	19	12
Other . . . . .	16	20
Total . . . . .	100	100

Source: "Mobilité sociale et dimension de la famille", Population, No. 1, 1951, and Bureau universitaire de statistique.

<sup>a</sup> Percentage distribution of positive answers only. 20 per cent declared to have no preferred faculty.

It thus seems that the social prestige of an engineer or scientist is today fully on a par with that enjoyed by most careers based on a classical education or law. This enhanced prestige is undoubtedly to be explained by the sharp increase in the demand for engineers and scientists in post-war years. No comparable increase in the demand has occurred for non-technical careers, and in some countries it is even felt that there may not be a sufficient number of posts available to accommodate the large number of graduates now coming on to the market.<sup>49</sup>

The prestige factor may, however, be of importance in limiting the interest in non-academic engineering careers, since in most countries there continues to be a sharp class barrier between people with and without academic or "professional" status. A more liberal policy of admission into professional associations might contribute to remedying this.

Apprehensions that the risk of unemployment may be particularly high in the field of technology and science are probably rare, although in Belgium it is held that the situation in the early 'thirties is still fresh in people's memory and tends to limit recruitment to technical studies. The difficult conditions in early post-war years in Austria, when new graduates were far in excess of available posts, have had a similar effect.<sup>50</sup> More recently the number of entries into faculties of technology and science has recovered somewhat.

<sup>47</sup> A Belgian report maintains that "the first contributory factor to the shortage of engineers is the difficulty of the university course, for which the secondary school does not provide a satisfactory grounding".

<sup>48</sup> This question has lately been extensively discussed in France. But the need for giving a more satisfactory scientific foundation to students intending to pursue other careers is emphasized rather than that of encouraging a larger flow of students into technology and science. Anyway, the recently decided increase in hours devoted to mathematics in secondary schools mainly concerns students in fields other than technology and science (see *Le Monde*, 28 December 1956 and 15 March 1957). In Denmark it is recommended that an eighth year of compulsory schooling with heavy weight on mathematics and physics be introduced in order to awaken the interest for careers in these fields (*Tidsskrift for Industri*, 15 May 1956).

<sup>49</sup> For instance, in Denmark it is considered desirable that the number of graduates in humanities be reduced in the years 1961 to 1965 by as much as one-third by comparison with 1951 to 1955.

<sup>50</sup> The number of new graduates in the near future will be seriously affected. Thus, in the coming three years there will be a maximum of 250 persons graduating in engineering per year, as against 400 in 1954/55 and 550 before the war. Source: "Der technische und naturwissenschaftliche Nachwuchs in Österreich", *op. cit.* See also *Arbeit und Wirtschaft*, No. 5, 1 May 1956 and "Die Überfüllung der akademischen Berufe", *Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung*, Heft 9, 1948.

It is difficult to determine whether the relative levels of remuneration in science and technology offer sufficient attraction into these fields.<sup>51</sup> A recent inquiry among university graduates in the United Kingdom<sup>52</sup> suggests that the income level for scientists and technicians in British industry compares somewhat unfavourably with that of other academic professions. Scientists engaged in industry received slightly higher starting salaries than did arts graduates, whereas technologists had no such advantage over the latter. After four years of employment, however, arts graduates occupied more highly paid posts than did either scientists or technologists. It seems that higher-level jobs in industry are given as frequently to persons without as to persons with academic training in technology and science; an inquiry among a number of big industrial enterprises in Belgium in 1954 shows that only 50 per cent of the managers had university training.<sup>53</sup>

On the whole, there is little evidence that the levels of remuneration and promotion prospects are important deterrents to the recruitment of scientists and engineers; but there is no doubt that these factors are of great importance in determining their field of employment. The fact that the shortage of teaching personnel in science and technology is everywhere bigger than the shortage of engineers in industry is closely connected with the lagging behind—at least until the recent past—of teachers' pay by comparison

with salaries of engineers in industry. According to an inquiry made in 1951 by the Royal Dutch Association of Chemical Engineers, salaries 30 to 40 per cent higher were paid to chemical engineers in industry than to those in teaching jobs.<sup>54</sup> Since then, however, teachers' pay in the Netherlands has risen considerably. The report on graduates' salaries in the United Kingdom which has already been mentioned shows that starting salaries in teaching were somewhat higher than those offered in industry both for arts and science graduates, but after four years of employment industry offered better-paid jobs for both types of graduates than did teaching. Scientists in the civil service had lower salaries, both at the start and later, than scientists in industry, while for technologists the Government offered better pay than industry.

There is little statistical information on the situation in other countries, but the general impression is that industry has been offering salaries high enough to attract scientists and technologists away from employment in teaching and research. Higher pay and, for scientists, possibly also better conditions of work have also tended to encourage emigration of technologists and scientists from western European countries during the post-war years.<sup>55</sup>

<sup>54</sup> "Toekomstige werkgelegenheid voor en aanbod van academisch gevormde chemici", *op. cit.*

<sup>55</sup> Of the 300 engineers graduating in Denmark in 1951 more, than 50 per cent left the country to work abroad. Of these, only one-half took employment with Danish enterprises abroad. The total number of Danish engineers working abroad in 1953 was about one thousand. It is held that it is not unreasonable that this figure will increase three- or fourfold in the years up to 1970.

It is estimated that about 50 per cent of Austrian graduates in electrical engineering in the years 1950-1955 have gone abroad, largely to western Germany and Switzerland. In many Swiss enterprises 30 per cent of the engineers are of foreign nationalities. (See "Der technische und naturwissenschaftliche Nachwuchs, in Österreich, *op. cit.*"). Migration of Austrian engineers to the United States has also been on a big scale in post-war years.

<sup>51</sup> Available data on income, which are in any case not detailed enough with respect to profession, age, level of experience and education, relate to total income, including income from sources other than work. In any event, a meaningful comparison of this kind can be made only if account is taken of the relative costs of education.

<sup>52</sup> *Salaries of Graduates in Industry*, Political and Economic Planning, 18 March 1957.

<sup>53</sup> "Les universités et la formation des cadres supérieurs des entreprises", *Revue de la Fédération des industries belges*, March 1955.

## 5. SUMMARY OF FINDINGS AND CONCLUSIONS

Two main conclusions emerge from the preceding discussion of the problem of highly qualified technical manpower in western Europe.

Firstly, the rate at which new engineers are being trained appears to be too low, allowing, in the typical case, for an annual increase in the stock of engineers of some 1 to 2 per cent. Even in the unlikely event of there being no major technological changes during the next 5 to 10 years, this rate of increase appears insufficient to maintain an expansion of industrial production at a stable and reasonably high rate.

Secondly, the existing stock of engineers appears not always to be utilized to the best advantage. On the one hand, there is the widespread phenomenon of engineers with full academic training being employed in technical jobs for which they are clearly over-qualified. This is the case especially in countries (for instance France) where there is a relative lack of the middle layer of technicians; in the United Kingdom, as was seen, the situation is rather favourable in this respect. On the other hand, there is the diversion of engineers—through the attraction of

better pay—to jobs in current production and to purely commercial functions at the expense of pure and applied research. For scientists, the diversion is towards industry at the expense of teaching. Through this diversion, any existing over-all shortage of highly qualified manpower has been largely prevented from adversely affecting current output, but only at the price of endangering, at least potentially, the future rate of technical progress and the training of new generations of engineers and scientists.

The damage already done can, of course, easily be exaggerated. Only sporadic shortages have appeared so far, and the main concern is for the future. It is, however, highly important that future difficulties should be anticipated at an early stage, since in this field it may take many years to increase the supply once it has been allowed to fall below the required level.

The first, and obvious, policy measure which suggests itself is to expand the facilities for the training of engineers, scientists and technicians. But the important point is that the mere increase of the capacity of existing universities and schools and the granting of more funds for scholarships and equipment are unlikely to be sufficient. There seems, in addition, to be a need, varying from country to country, to modify the training systems themselves, with a view to making them more flexible.

#### *The Need for Flexibility*

Three main aspects of the need for flexibility in training systems may be briefly mentioned.

The first concerns the basis for recruitment of students of technology and science, which needs to be broadened in such a way as to give access to these careers to the most talented. This does not only imply more generous granting of scholarships. In some countries, the secondary school systems are over-specialized, with the result that the decision as to whether or not a child shall eventually undergo higher training in technical disciplines must be made at an early age when his talents and inclination cannot yet be gauged. In the same vein, there is need for more liberal rules of admission to technical universities and similar institutions, so that the way to the highest qualification remains open also to workers who for several years have been engaged in production. Such liberalization of rules of admission by no means implies less severe entrance examinations: what is needed is a relaxation of rules concerning age and previous formal schooling.

The second requirement, closely connected with the one just mentioned, is for a finely differentiated

“vertical” structure of the training systems, with intermediate degrees (from the fully qualified academic engineer down to the absolvent of vocational school) and with facilities for transition to a higher layer on the basis of proven talent. As already mentioned, a lowering of the class barrier between the academic and the non-academic engineer and scientist would reduce the waste of talent in two ways—by improving recruitment to higher studies, and by preventing the most highly qualified categories from being employed in jobs for which they are over-qualified.

The third aspect of the need for more flexibility concerns the curricula. Many competent observers find that there is a tendency towards over-specialization of engineers into too narrowly defined branches. A very high degree of specialization is naturally what the individual industrialist wants when he has to hire an engineer, but the danger is that the market for highly qualified manpower may be subdivided into too many and too small compartments, among which transfer is difficult, so that changes in the rate of progress in various industries give rise to persistent shortages or surpluses of particular specialities. It is also true, that, as mentioned above, the spread of automation will require engineer managers with a broad technical and scientific training.

While these seem to be the more salient conclusions, two more problems need to be mentioned, by way of summary—the shortage of teachers in technical and scientific subjects and the insufficiency of facilities for research. The first problem is largely one of the relative levels of remuneration. A solution of the second problem, that of research, may have to be sought partly through the enlargement and merging of research institutes, possibly through the creation of autonomous public bodies.

#### *International Aspects*

There is no inherent reason why domestic requirements and domestic training of highly skilled technical and scientific manpower should be balanced for each country taken separately. In contrast to literary disciplines and law, persons trained in technology or science are, or should be, employable in any country. There is, in fact, a considerable interchange of engineers within Europe; it has been seen, for instance, that a large number of Danish engineers are employed abroad, and that a considerable share of the supply of engineers in Norway consists of Norwegians trained abroad.

It is obviously desirable that there should be possibilities of large international movements to meet changes in demand in the various countries. But besides such equalizing flows among the more devel-

oped countries, it is also desirable that there should be an increasing net flow of engineers and scientists from the rich to the poorer countries. Development policies in under-developed countries are almost inevitably impeded by the bottleneck of highly skilled manpower; indeed, the extreme difficulty of breaking this bottleneck without assistance from abroad is one of the surest criteria of a state of underdevelopment.

Against the background of vast needs for technical assistance to under-developed countries, the danger of a genuine over-production of highly qualified technical manpower in the developed countries seems indeed to be remote. It was seen in a preceding section that such forecasts of domestic demand for engineers as have been made in various countries are extremely vague and inconclusive. In most cases they appear to be on the low side even with respect to purely domestic requirements, and they do not take into account the need for an increased flow of highly skilled manpower to overseas countries. If the

assistance to under-developed countries were to be increased to anything near the desirable level, the output of engineers in the highly developed countries would have to increase at a considerably faster rate than domestic requirements. In other words, forecasts of domestic requirements should be regarded only as indicating the bare minimum of training requirements.

If there is no reason to fear an over-production of engineers and scientists in the highly developed countries, there is, on the other hand, a danger that an insufficient supply may have unfavourable repercussions not only in the highly developed countries themselves, but also in the less developed ones, where an already insufficient stock of engineers—and especially of scientists—may be diminished by emigration, towards the richer countries, where highly paid jobs can be offered. There has been increasing evidence in recent years of such a perverse flow of highly skilled manpower from the poorer to the richer countries.

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## NOTES TO THE STATISTICS

### A. General

Information about education and active population of engineers and scientists is very scarce. In many cases the statistics shown cannot be clearly qualified, because of lack of explanations in the available sources. This is especially true as regards the distribution by economic branches of activity: the sector "public administration" may include activities which would normally be classified with other sectors, such as transport, construction, etc. Such distortions in the distribution of engineers and scientists directly affect the ratios "per thousand employed" because data on total active population are classified according to the normal coverage of each branch of activity.

### B. Active engineers and scientists

(Tables 1, 4, 5 and 11)

#### *Austria*

The total number of engineers was taken from *Engineering and scientific manpower in the United States, western Europe and Soviet Russia*, U.S. Congress, Washington, D.C., March 1956. The distribution by branch relates to academic and non-academic engineers and technicians, taken from *Ergebnisse der Volkszählung vom 1. Juni 1951*.

#### *Belgium*

The total number of engineers was taken from *Revue d'informations de la Fédération royale des associations belges d'ingénieurs*, first quarter of 1957. The distribution by branch refers to 1947 and was taken from *Recensement général de la population, de l'industrie et du commerce au 31 décembre 1947*, as were the data relating to scientists.

#### *Finland*

*Väestötilasto 1950.*

#### *France*

Vermot-Gauchy, "Nos besoins en ingénieurs", *Bulletin SEDEIS*, Paris, 1956, and 1954 census data communicated by INSEE.

#### *Western Germany*

*Die Berufliche und Soziale Gliederung der Bevölkerung der Bundesrepublik Deutschland nach der Zählung vom 13. September 1950*. Data relate to engineers and technicians.

#### *Great Britain*

*Scientific and Engineering Manpower in Great Britain*, Ministry of Labour.

The break-down by branch for engineers does not cover non-nationalized mines and transports, shipping, distributive trades, miscellaneous services, self-employed persons and persons employed as consultants, for which an estimated total of 10,000 has been included in the total number of engineers.

Similarly, the Ministry of Labour inquiry does not cover all sectors for scientists and no allowance for this has been made in the total.

Distribution by age groups for engineers was taken from *1951 Census* for England and Wales.

#### *Greece and Sweden*

*Shortages and Surpluses of Highly Qualified Scientists and Engineers in western Europe*, OEEC, 1955.

#### *Hungary*

*Társadalmi Szemle*, No. 9, 1955; *Műszaki élet*, No. 17, 1956.

#### *Italy*

The total for active engineers was communicated by the Istituto Centrale di Statistica.

#### *Netherlands*

*12<sup>e</sup> Volkstelling, Annex woningtelling*, 31 May 1947, Series A, Vol. 5.

#### *Norway*

*Prognose over behovet for sivilingeniører NTNF*, Norges Tekniske Naturvitenskapelige Forskningsråd, May 1956.

#### *Portugal*

*IX Recenseamento Geral da População*, 1950, Tome III, Vol. I.

*Soviet Union*

*Narodnoe Khoziaistvo SSSR*, 1956.

*Switzerland*

Data communicated by the Bureau fédéral de statistique.

*United States*

*Engineering and Scientific Manpower in the United States, Western Europe and Soviet Russia*, U.S. Congress, Washington, D.C., March 1956.

*Scientific Personnel Resources, and Science and Engineering in American Industry*, National Science Foundation, Washington, D.C., 1955.

**Table 2**

The institutions to which the data relate may be characterized as follows:

*Austria*

*Technische und gewerbliche Lehranstalten* are technical and industrial part- and full-time schools, some of which give a five-year course leading to a diploma which opens the way to higher technical education. Most of the pupils are part-time students: age of entry, 14; age of taking diploma, 19 or over.

*France*

Technical colleges take pupils at the age of 14. Some of the pupils go on to the National schools of engineering or take the technical *baccalauréat*. National vocational schools provide a course terminated by a certificate (*brevet*) and prepare also for the technical *baccalauréat*. Entry into further technical education is possible by competitive examinations.

*Western Germany*

*Fachschulen* are open to pupils who have practical training and have attended a part-time industrial school—they provide pupils of 17-18 the opportunity to take a course of intensive training of one to three years, at the end of which they sit for a state examination and in certain cases gain admittance to a university college. *Fachschulen* are full-time schools.

*Italy*

The *istituti tecnici* give a five-year course (full-time) leading to a diploma. In principle, the pupils are from 14 to 19 years of age; no admittance to higher technical education is possible.

*Norway*

"Technical schools" are intended to give to the students general and technical education; to be admitted in technical schools, students must have reached the age of 17, have at least two years of apprenticeship training in the field in which they want to specialize at school. The ordinary courses of the technical schools last two years. There are plans for an additional third year which leads to an examination qualifying for the entry to the Norwegian Technical University.

*Sweden*

*Tekniska Gymnasier* give both vocational and general education; three years' studies or two years with two years' practice lead to a diploma.

*Soviet Union*

Secondary semi-professional schools (technicums). Data refer to those in the field of engineering and applied sciences only.

*Switzerland*

Studies in *technicum* vary from three to five years' full-time studies according to the kind of diploma pursued. Age of entrance into the *Technicum*, 15.

*United Kingdom*

The institutions offer four kinds of diploma:

- (a) Ordinary National Certificate after three years of part-time studies from 16 to 19 years.
- (b) Higher National Certificate after five years of part-time studies from 16 to 20-21 years.
- (c) Ordinary National Diploma after two years of full-time studies.
- (d) Higher National Diploma after 1-3 years of full-time studies from 17 to 21 years or after 1-4 years of sandwich courses from 17 to 22 years.

**C. Education Statistics**

(Tables 8, 9 and 10 and Chart 1)

*Austria*

"Der technische und naturwissenschaftliche Nachwuchs in Österreich", *Monatsberichte des Österreichischen Institutes für Wirtschaftsforschung*.

*Belgium*

*Annuaire statistique de la Belgique et du Congo belge*.

*Denmark*

*Statistisk Årbog.*

*Finland*

*Tilastollinen Vuosikirja.*

*France*

*Recueil des statistiques scolaires et professionnelles de 1936 à 1942 ; Recueil des statistiques universitaires 1954/55*, both published by the Bureau universitaire de statistique, and data communicated by this institution.

*Eastern Germany*

*Statistisches Jahrbuch der DDR ; Statistische Praxis.*

*Western Germany*

Data communicated by the Statistisches Bundesamt.

*Great Britain*

*Returns from universities and university colleges, 1950/51 to 1954/55*, University Grants Committee, Command Papers, Cmd. 8638, 8847, 9130, 9477, 9800.

*Hungary*

*Magyar statisztikai zsebkönyv*, 1956.

*Ireland*

*Statistical Abstract of Ireland.*

*Italy*

*Annuario statistico dell'istruzione italiana*, 1955.

*Netherlands*

*Statistisch Zakboek*, 1955/56.

*Norway*

*Statistisk Årbog for Norge ; Behovsanalyse for Realister*, Toralf Hernes, NTNf Komité for vitenskaplig personell, Oslo 1955.

*Poland*

*Rocznik Statystyczny*, 1955, 1956.

*Portugal*

*Anuário Estatístico.*

*Soviet Union*

*Kulturnoe Stroitelstvo SSSR*, 1950.

*Spain*

*Anuario Estadístico de España.*

*Sweden*

*Statistisk Årsbok för Sverige.*

*Switzerland*

*Annuaire statistique de la Suisse.*

*United States*

*Biennial Survey of Education in the United States*, 1952-1954.

## THE HUNGARIAN ECONOMY IN THE SPRING OF 1957

*The widespread concern at the possible economic consequences of the political events of last autumn makes an analysis of the present economic situation and prospects in Hungary particularly timely. During recent months the flow of statistical data on the Hungarian economy has greatly increased, making possible a reasonably comprehensive analysis both of economic developments during the last critical seven months and of the present situation.*

*This note therefore attempts to assess the economic situation and prospects in Hungary in the spring of 1957. The background to the developments here described can be traced in the discussions of economic conditions in eastern Europe contained in past Bulletins and Surveys, and especially in the article on Hungary in the Economic Bulletin for Europe, Vol. 7, No. 2.*

The uprising of last October and November came at a time when the economy of Hungary was already over-strained by an intense investment and export drive and shortages of vital fuels and materials. The general strike, which for some time affected all industry, brought industrial production and transport services practically to a standstill; but from mid-December onwards activity expanded rapidly, despite the losses of men and capital that had been sustained, and by March the level of gross output in all the main sectors of industry was restored to between 75 and 95 per cent of the September 1956 level. More remarkably, supplies of consumers' goods have been maintained so far at a level permitting a retail trade turnover in the first quarter of the year which was 10 per cent greater than in the same months of 1956, at prices not significantly higher.

But this recovery has depended heavily on the running down of accumulated stocks and the mortgaging of future export receipts and living standards by incurring a heavy foreign debt.<sup>1</sup> The economy of Hungary now faces, from a general position worse than that of last September, the same problems—of shortages of fuels and raw materials, of organizational and production difficulties in agriculture and of strain on the consumers' goods market and the balance of payments—which existed then, and which also face the other countries of eastern Europe.

<sup>1</sup> An appraisal in this sense has recently been given of the situation by the Chairman of the Price Board:

"By consuming state stocks, by contracting foreign commodity credits and by retaining exports the appearance can temporarily be created of an economic 'miracle' but no economic consolidation can be established on such a ground." (*Népszabadság*, 17 March 1957.)

### I. DEVELOPMENTS AND PROSPECTS IN INDUSTRY AND AGRICULTURE

#### *Losses of Manpower and Capital*

The losses inflicted upon the national economy by the fighting in October and November were considerable both in men and in material. The damage to industry, the socialist sector of agriculture and to both trade stocks and houses in Budapest appears to have been the most important items of capital destruction, which seems to have amounted in total to just over 1 per cent of the estimated total capital stock, or not more than about three months' investment at the average rate of the last three years. Damage to industrial capital was concentrated on mining, and especially on coal and uranium mining (in coal mining 2.6 per cent of the capital is estimated to have been destroyed).

Official estimates speak of 2,500 to 3,000 persons killed (of whom 1,800 to 2,000 in Budapest) and

20,000 persons wounded during the fighting. A further and numerically heavier loss of manpower resulted from the massive emigration which followed, amounting to nearly 185,000 persons up to the end of April.<sup>2</sup> The population of the country, which, on the basis of registered live births and deaths, ought to have increased from 9,861,000 on 1 January 1956 to about 9,950,000 on 1 January 1957, in fact decreased to less than 9,800,000 by that date and to 9,770,000 in the following month.<sup>3</sup> Thus, in total numbers, nearly two years' natural population increase has been lost in the period October 1956 to January 1957.<sup>4</sup> But the

<sup>2</sup> See Appendix Table V. Up to the end of April 1957 about refugees had returned 10,000.

<sup>3</sup> See *Statistikai Szemle*, No. 11-12, 1956, p. 929 and *Népkarát*, 10 March 1957.

<sup>4</sup> Population on 28 February 1955 was estimated at 9,768,000.

economic loss is greater than is indicated by the total numbers, since both those killed in the fighting and the emigrants were mostly men in the younger age groups.

The high share of economically active persons, and of industrial workers in particular, within this emigration appears clearly from a comparison of national averages with a sample of refugees:

	Average for all Hungary	Estimate for refugees <sup>a</sup>
	Percentage of total population	
Economically active persons . . .	45½	66
of which :		
Industrial workers . . . . .	13	47½
Farmers and farm workers . . . .	20	3½

<sup>a</sup> Based on reports, released by the U.N. High Commissioner for Refugees, covering 65 per cent of the new emigrants in Yugoslavia and 69 per cent of those in Italy.

Industrial workers, technicians and other industrial personnel probably accounted for as much as 80 per cent of the refugees formerly gainfully employed. In addition many professional workers, office workers and students have left the country.<sup>5</sup>

While this loss of manpower will be a handicap to economic development in the future, the immediate

<sup>5</sup> Students are not included in the occupation statistics quoted above. Among refugees counted in Yugoslavia, high school and university students accounted for 14.3 per cent.

Table 1 : Value of and losses to capital stock

	Value of capital stock	Losses to capital stock	
	1 January 1956	October-November 1956	
	Billions of forints		
			Per-centage
Industry . . . . .	38.4	0.85 <sup>a</sup>	2.2 <sup>a</sup>
Agriculture . . . . .	23.0	0.40 <sup>b</sup> *	1.7 <sup>b</sup> *
Transport . . . . .	37.3	0.03	0.1
Housing . . . . .	..	0.34	..
Other sectors . . . . .	..	0.13 *	..
Stocks of consumers' goods	14.0	0.75 <sup>c</sup>	4.3 <sup>c</sup>
	208.5 <sup>d</sup>	2.50	1.2

Sources : Magyar Statisztikai Zsebkönyv, 1956, p. 43; Népakarat, 26 January, 1 February and 27 March 1957; Statisztikai Szemle, No. 11-12, 1956, pp. 924, 928.

<sup>a</sup> The damage to industry has been obtained as a residual from the total and the known details in official estimates, and may in fact be less than shown.

<sup>b</sup> State farms and co-operatives only (of which : damage to state farms—150 million forints).

<sup>c</sup> Commodity stocks in trade destroyed, damaged or looted.

<sup>d</sup> Net value of fixed capital (at the notional book values of the official capital accounts) plus commodity stocks in trade.

fear at the beginning of the year was of massive unemployment as a result of the industrial dislocation and shortages of fuels and materials. This has not, however, materialized. Despite the low level of production, industrial establishments have in general retained—and paid—their workers and have accepted, temporarily, the resulting increase in costs arising from inevitably low output per man employed. The falls in employment shown in Table 2 were partly

TABLE 2

Employment of wage and salary earners and forecast changes in 1957

Thousands

	Actual employment			Changes in employment from 20 October 1956 as forecast in December	
	Average of 1955	20 October 1956	Changes from 20 October 1956 to 15 February 1957	15 February 1957	20 October 1957
Industry . . . . .	927 <sup>a</sup>	940 *	-85	-148	-20
Building and contracting . . . . .	177	220 *	-25 *	-108	-88
Agriculture . . . . .	320	360 *	-70 *	-68	-3
Transport . . . . .	245	260 *	0	+4	+8
Trade . . . . .	261	275 *	0	-20	-4
Administration, social and cultural services . . . . .	281	285 *	-30	-26	-18
Other . . . . .	167	135 *	-25 *	-34	-58
Total . . . . .	2 378	2 475 *	-235 *	-400	-183

Sources : Magyar Statisztikai Zsebkönyv, 1956, p. 164 (1955). Statisztikai havi Közlemények, No. 1, 1957, pp. 8 and 72 (for estimates of employment on 20 October 1956); Közgazdasági Szemle, No. 11-12, 1956, p. 1311 (forecasts for 1957); information received from the Central Statistical Office and Népszabadság, 7 February 1956 (on actual reduction of employment); for

agriculture the foreseen seasonal changes were assumed to have taken place; the "other" sector is a very rough estimate.

<sup>a</sup> Of which : 904,000 workers and office workers in factories, 7,000 in artisan co-operatives and 16,000 in private artisan workshops (see Zsebkönyv, op. cit., pp. 79, 80, 166).

TABLE 3

Indicators of industrial production in certain branches of industry and building,  
and numbers employed

Index numbers—September 1956=100<sup>a</sup>

Series	1956				1957		
	September	October	November	December	January	February	March
<i>Large-scale industry</i>							
Gross output . . . . .	100	78	21	33	64	69	80
Output per man on the payroll . . . . .	100	68 *	20 *	38 *	68	75	86
Workers on the payroll . . . . .	100	114 *	105 *	88 *	94	92	93
<i>Workers on the payroll (thousands)</i> . . . . .	724	825 *	760 *	637 *	681	664	674
<i>Gross output in certain sectors</i>							
Coal mining <sup>b</sup> . . . . .	100	90	13	22	63	72	85
Metals . . . . .	100	71	8	18	43	56	77
Engineering . . . . .	100	57	4	18	55	65	75
Chemicals . . . . .	100	74	15	32	65	78	93
Light industry . . . . .	100	..	..	..	64	72	81
Food industry . . . . .	100	104	57	63	83	72	77
<i>Gross output of state building industry</i> . . . . .	100	..	..	..	58 *	59 *	63 *
<i>Employment in artisan co-operatives</i> . . . . .	100	..	..	..	..	..	99
<i>Number of private artisans</i> . . . . .	100	..	..	..	109	114	119

Sources: *Statistikai havi közlemények*, No. 2, 1957, pp. 10, 12; *Népakarát*, 13 March 1957; information received from the Central Statistical Office.

NOTE.—The output series refer to gross enterprise output. Figures on employment and output per man in October to December 1956 are rough indications based on estimates of the number of staff receiving payments.

Since output is measured "gross" and the import content of gross output has risen, the figures given in the table understate the fall in output and labour productivity in terms of "value added".

<sup>a</sup> Without adjustment for changes in the number of working days.

<sup>b</sup> The index refers to the quantity of coal produced.

accounted for by emigration or, in building and agriculture, by seasonal factors. Since the beginning of March employment exchanges have reported that industrial vacancies for both skilled and unskilled men exceed the number of applicants, though the placing of women and of office workers is more difficult.

The Government's declared intention to increase efficiency through dismissals of employees surplus to the needs of their factories or other establishments has so far been put into effect only in the field of administration, where some former employees have moved into artisan workshops which have greatly increased their labour force (see Table 3). Looking to the future, the possibility of an unemployment problem this year does not seem to have vanished, and apprehension has already been expressed about the possibility of finding employment for the new entrants to the labour force.<sup>6</sup> Whether the effects

on employment of the eventual enforcement of the Government's plan to eliminate concealed unemployment will be offset by the increase in working places created by rising industrial output remains in doubt, particularly in view of the possibility that fuel and raw material shortages may limit the pace of industrial expansion.

*Industrial Output from October to March*

After fluctuating about a very low level from the first outbreak of disturbances in October until the end of the year, industrial output has since risen fairly steadily and reached a level in March about 20 per cent below that of September 1956 (see Table 3). Except during the periods of active fighting (24 to 28 October and 4 to 10 November) the level and pattern of production during the last quarter of 1956 was determined mainly by coal and electric power

<sup>6</sup> A resolution of 16 March 1957 by the Provisional Central Committee of the Hungarian Socialist Workers Party on some educational problems of young people and the constitution of a Hungarian Communist Youth League contained the following passage on this point (see *Népszabadság*, 17 March 1957):

"We have been unable to find appropriate possibilities of continued study and employment for many thousand young people who had finished primary schooling in the last few years. We have difficulties also with placing adequately some youths who had finished high schools and universities."

supplies and by the decisions of workers whether or not to join in the strike. Coal production was, in general, maintained by the miners at a level sufficient to satisfy emergency requirements (including those of hospitals and public utility services and domestic needs) and so was electric power production, which throughout this period received 25 to 30 per cent of total coal supplies. The particularly heavy falls in output in the metals, engineering and chemicals industries, shown in Table 3, indicate the greater readiness during this period to produce processed food and consumer manufactures rather than goods for investment or export.<sup>7</sup>

In the first months of 1957 coal and power shortages still constituted the main limitation on industrial output, and the policy then followed aimed at obtaining an optimum incentive and employment effect from limited fuel and energy resources by giving priority in their allocation to consumer-goods industries, on the one hand, and to industries with a high ratio of employment to fuel and energy used, on the other.<sup>8</sup> In the course of February the supply of home-produced and imported coal approached the pre-October levels and enabled the authorities to change over to a policy of raising the output of all products in fairly equal proportions and independently of their fuel and raw material content. Thus the commodity pattern of production developed up to the autumn of last year is being progressively restored.<sup>9</sup>

#### *Fuel and Power*

The fuel and power sector was the key sector of the economy throughout this period. In September there was already an acute crisis, precipitated by the breakdown of mineral oil production in an important field last July, and by November coal and mineral oil production had fallen to only 13 per cent of the already unsatisfactory September level. However, coal mining recovered comparatively fast this year, in spite of the need to replace a substantial part of the labour force by entirely new men, though mineral oil production seems likely to remain, for some time to come, only a fraction of its 1956 volume.

An extremely difficult recruitment problem presented itself in the coal industries following the strikes of

November and December and the departure of more than half the coal mining labour force (including the 13,500 reported to have been ordered to the mines by what is called "The Directorate of Works of Public Interest").<sup>10</sup> The gap was, however, filled with remarkable speed by building up a comprehensive system of incentives, including wage increases higher than those granted to other workers,<sup>11</sup> extra supplies to shops in mining districts and special housing schemes.<sup>12</sup> By February (as can be seen from Table 4) average monthly employment was only 5 per cent below the previous peak level; but of the whole personnel only 38 to 40 thousand were "old" miners and 50,000 were mostly men without any experience in coal mining.<sup>13</sup>

In these conditions the actual recovery of output per head—to nearly four-fifths of the September level—was at least as much as could have been expected,<sup>14</sup> particularly in view of the loss of 6,000 skilled underground workers.<sup>15</sup>

The production plan for 1957 announced in February implied a monthly rate of output for the remainder of the year which was in fact reached in March. But the target was raised in May to a figure, equal to production in 1956, which implies an average monthly output of 1.79 million tons (6 per cent greater than that in March) during the remainder of the year. As a consequence estimated import requirements for the year have been reduced but remain nearly 2½ times the actual imports in 1956.<sup>16</sup>

Crude oil production is expected to be only half of last year's actual output in 1957, which means one-

<sup>10</sup> See *Népszabadság*, 1 January 1957.

<sup>11</sup> Between August 1956 and January 1957 the average monthly per capita earnings of coal miners rose by 31 per cent as compared with 19 per cent for all industrial workers.

<sup>12</sup> This year 10,000 dwellings for miners are to be started in the state financed scheme, of which 7,500 are to be completed before the end of the year. A credit of 75 million forints will also be given to encourage miners' self-owned house construction. Credit will be granted for twenty-five years on condition of a contribution by the owner of 3,000, 5,000 or 8,000 forints, according to the size of the house (one, two, or three rooms). After fifteen, twenty or twenty-five years of continuous service capital reductions of varying amounts are accorded (see *Népszabadság*, 24 January 1957 and *Népakarat*, 25 January 1957).

<sup>13</sup> *Népszabadság*, 27 February 1957.

<sup>14</sup> But the calorific value of coal produced also declined between September and February by nearly 5 per cent, from 3,442 to 3,281 calories/kilogramme (cf. *Statistikai havi közlemények*).

<sup>15</sup> *Népszabadság*, 3 March 1957. In 1955, the number of hewers in the mines was 26,456 (see *Statistikai Szemle*, No. 11-12, 1956, p. 1003).

<sup>16</sup> In early January the Minister of Heavy Industry estimated import requirements for the year at 3 to 4 million tons (see *Népszabadság*, 1 January 1957), but finally an import of 2 million tons was planned (see Appendix Table III).

<sup>7</sup> For further details see Appendix Table I.

<sup>8</sup> See *Népakarat*, 30 January 1957.

<sup>9</sup> This tendency was still noted with some apprehension in late March, as can be seen from the following quotation from *Népszabadság* (20 March 1957): "The leading personnel of ministries and enterprises are trying today to restore the proportions within production that prevailed prior to October. This is a right endeavour regarding costs or productivity but not necessarily so regarding the composition of output."

TABLE 4  
Output, employment and output per worker in the coal mining industry  
Month or monthly averages

Period	Employment	Output per shift	Planned output	Actual output	Imports (equivalent home output) <sup>a</sup>	Total supplies
	Thousand workers	Kilo- grammes				
	Thousand tons					
January-September 1956 . . . . .	93.9	968	1 957	2 016	136	2 152
September 1956 . . . . .	93.7	987	..	1 988	..	..
October 1956 . . . . .	84.5 *	950 *	2 045	1 784	100	1 880 *
November 1956 . . . . .	35.0	..		254		360 *
December 1956 . . . . .	45.0 *	370		441	200	641
January 1957 . . . . .	79.5	647	1 147	1 244	470	1 714
February 1957 . . . . .	89.3	774	1 280	1 435	550	1 985
March 1957 . . . . .	89.8	851	1 596	1 698	570	2 268
Plan April-December 1957 . . . . .	..	..	1 790	..	270	2 060

Sources: Statisztikai havi Közlemények, No. 2, 1957, pp. 16, 18, 89; Fontosabb adatok, az 1956 október-decemberi időszakról, Budapest, p. 7 (employment in September 1956); Népakarat, 25 January 1957 (employment in November 1956); Népszabadság, 14 December 1956 and 1 January 1957 (for estimating employment in December 1956); Népszabadság, 3 March 1957

(employment in February and plans for January and February); Népszabadság and Népakarat, 4 April 1957 (employment in January and all information for March).

<sup>a</sup> One ton of imported coal is assumed to be the equivalent of two tons of home-produced coal.

third of last year's plan.<sup>17</sup> With planned imports at nearly double planned production, total supplies, nevertheless, may be higher than last year and only 10 per cent below the 1955 level. Electricity production has developed since January more or less in step with coal production; but peak load performance (970 MW) is expected just to surpass that of 1956 (955 MW) by the end of the year.<sup>18</sup>

On balance, the prospects for this year seem to be that, if production and import plans are fulfilled, total fuel supplies during the last nine months of 1957 will be slightly less (perhaps some 4 to 5 per cent) than in the first nine months of 1956.

#### Light Industry and Artisan Production

As has already been mentioned, the light and food industries were given a clear priority over heavy industry from late October until the end of February, since the workers and their councils maintained a relatively high level of output in these branches despite the general strike; but it is uncertain whether this priority, subsequently maintained by the Government, is going to continue into the future. Present plans provide for a rise of 9 per cent over 1956 levels for light industry production in 1957 as a whole and

an output 4 per cent lower than last year in heavy industry. In line with this policy of giving priority to the light industries, however, restrictive policies towards artisan producers have been abandoned and encouragement given to both collectively organized and individual artisans,<sup>19</sup> who can play a substantial role in bridging the gap between commodity availabilities and consumers' demands.

Production recovered in the textile and clothing industry by February to 70 per cent, or more, of the level in September. But the fall in raw material supplies in 1956 represents a threat to future production. For the first half of 1957, cotton mills can rely upon cotton which arrived but was not used in the last quarter of 1956 (about 5,000 tons) and upon new arrivals in the first months of this year at or above the normal rate in earlier years; and for rayon factories 80 per cent of normal demand for materials can be met in the first half of the year. The prospects for wool supplies are less certain, because imports in the five months from October to February were

<sup>19</sup> In this context the troubles caused by contrary policies may be recalled: "We have been witnesses to the deliberate corruption of the world-famous Hungarian small-scale industry in the years 1949-1953; thereby the weight of large-scale enterprises in our industry has increased extraordinarily—i.e., a line of development which usually implies a rise in the level on which demand is satisfied. It is a generally known fact that just the opposite happened in our case." (Közgazdasági Szemle, Nos. 11-12, 1956, p. 1289).

<sup>17</sup> See Appendix Table I.

<sup>18</sup> Népakarat, 16 February 1957.

TABLE 5  
Export of engineering products in relation to output

Commodity	Number of units exported per month						Percentage of production					
	1955	1956	1956 Oct.-Dec.	1957 Jan.	1957 Feb.	1957 March	1955	1956	1956 Oct.-Dec.	1957 Jan.	1957 Feb.	1957 March
Turret lathes . . . . .	61	67	18	32	51	71	45	49	39	32	40	49
Drills . . . . .	71	51	25	146	118	92	34	24	27	72	55	38
Milling tools . . . . .	44	48	16	24	30	46	68	77	114	171	75	58
Motor trucks . . . . .	172	132	67	29	163	222	56	53	62	16	62	71
Motor buses . . . . .	59	59	35	30	23	70	53	91	121	45	43	125
Combine harvesters . . . . .	99	106	24	12	20	114	77	87	60	.. <sup>a</sup>	83	88
Motor-cycles . . . . .	578	542	377	73	626	505	42	23	42	5	25	20
Bicycles . . . . .	6 227	2 540	1 499	30	1 091	3 540	34	16	23	—	8	23
Wireless sets . . . . .	5 713	4 133	1 727	1 571	3 045	9 581	18	14	18	6	10	29

Sources: Statisztikai havi Közlemények and information received from the Central Statistical Office.

<sup>a</sup> No production.

below one month's normal requirements, and supplies of heavy hides to leather works are expected to be only about one-half of normal requirements in the first six months of 1957.<sup>20</sup> In these last two industries there is therefore a danger that raw material shortage may later slow down the expansion or force a deterioration in quality.<sup>21</sup>

#### Heavy industry

In heavy industry, as has already been noted, the fall in output below the September level remained greater than that for industry as a whole until March, but the stock of raw materials has nevertheless tended to decline. Already in February, however, more than normal supplies of heavy steel plates, copper, lead and tin were reaching the factories—mainly through extra imports—and the remaining raw material bottlenecks in this sector should be gradually eliminated from April onwards as a result of the new trade agreement with the Soviet Union. Important extra quantities of rolled steel and aluminium are promised by the Soviet Union for so long as home production is curtailed by the shortage of steel and electric power, and that country will also supply all imports of iron ore and about half of all imports of coking coal,<sup>22</sup> which is more than its earlier share.

Despite the limitation of engineering output in the first quarter of the year to about two-thirds of its pre-October level, there has been a notable recovery of both production and exports of certain important

export products (see Table 5). The effort made to maintain exports in the face of a sharp reduction in output is illustrated by the figures in the table, though the high export proportions at the end of last year are not, of course, significant—representing goods produced well before October.

#### Housing

The efforts to be made to increase the provision of dwellings in 1957 are illustrated by the figures in Table 6. They have been made necessary not only by the destruction and damage which occurred in October and November, but also by many earlier years of neglect. House-building during the last seven years has been little more than sufficient to meet the needs of categories of the population who were given special priority and the extremely low level of maintenance has allowed the stock of existing dwellings to deteriorate.<sup>23</sup> The greater increase in private house-building is a noticeable feature of this year's programme.<sup>24</sup>

<sup>22</sup> *Népszabadság*, 22 and 30 March 1957. A survey of repair needs on state-owned houses in Budapest showed already in 1953 the following results:

	Number of houses	Percentage of all houses
Group I (no need for major repairs) . . .	9 305	27
Group II (repair would be useful) . . . .	13 691	39
Group III (repair necessary in order to avoid capital loss) . . . . .	9 326	28
Group IV (without repair uninhabitable within one year) . . . . .	1 369	4
Group V (represents danger for life and safety) . . . . .	768	1.6

The number of apartments in Group IV was 14,441 at that date and of those in Group V, 5,822.

<sup>24</sup> Housing loans are to be given up to an amount of 40,000 forints at a rate of interest of 2 per cent up to a total amount of 400 million forints (see *Népszabadság*, 10 April 1957).

<sup>20</sup> *Népszabadság*, 18 January 1957.

<sup>21</sup> Thus much depends on the use that is made of the credits in free currency given by the Soviet Union and China to a total of 300 million roubles.

<sup>22</sup> See Appendix Table III.

**Table 6 : Number of planned and completed dwellings**  
(Thousands)

	Total	State and subsidized	Private
1955 . . . . .	31.5	13.6	17.9
1956 (Plan) . . .	40.0	25.0	15.0
1956 (actual) . .	16.0 *	10.0 a *	6.0
1957 (Plan) . . .	38 to 40	18 to 20 <sup>b</sup>	20.0

Sources : Magyar Statisztikai Zsebkönyv, 1956, p. 210; Szabad Nép, 30 December 1955, 10 February and 11 June 1956; Népszabadság, 1 March and 10 April 1957; Népakarat 1 March 1957.

a According to an official report 17.8 thousand dwellings were under construction at the end of the year.

b Altogether 10 to 12 thousand are expected to be completed in the general scheme and 8.5 thousand in the miners' scheme. Work is planned to start on 13 thousand dwellings.

Shortage of dwellings in Budapest is still acute despite the recent emigration of 5 per cent of its population.

#### Farm Input and the Prospective Pattern of Farm Output

Nothing so spectacular as the industrial strikes has affected activity in agriculture, though in this sector, too, profound changes have occurred, under pressure from farmers, which must be taken into account in any future agricultural policy that is to have a chance of success. The two most important developments have been, first, the large-scale dissolutions of and withdrawals from farm co-operatives—especially those which had been economically least successful—and, secondly, the collapse of the whole system of obligatory deliveries to state procurement agencies.

The exit from co-operatives following the events of October and November was much greater than that which followed the policy change of July 1953. Then, 570,000 ha. of arable land was transferred to the private sector in two years: on this occasion nearly 670,000 ha. was transferred in less than three months (see Table 7). The Government has so far succeeded in re-establishing collective farm enterprise on 30 per cent of the area transferred to private ownership since the end of September, but has undertaken to leave the remaining private farmers undisturbed—at least for the current farm year. Private farmers now hold about 75 per cent of the total area of arable land.

Obligatory deliveries of crops and other farm produce were abolished by decree-law No. 21 of 1956, effective 25 October 1956. In the new system of farm marketing, state free purchases and contractual purchases are intended to take over the role of former obligatory deliveries.<sup>25</sup> State purchasing agencies or farmers' trade co-operatives as agents for the State are carrying out the purchases of grain, wine,

<sup>25</sup> However, land tax will again be levied in kind at a rate of 4 kilogrammes of wheat for each "crown" of cadastral net revenue (a theoretical income based upon a land classification by modes of cultivation and soil quality) which should assure the procurement of roughly 550,000 tons of wheat equivalent (see Népszabadság, 6 April 1957 and Szabad Föld, 14 April 1957). Also threshing fees will have to be paid in kind to machine-tractor stations (Szabad Föld, 24 March 1957).

**TABLE 7**  
**Dissolution and reorganization of farm co-operatives**

	Unit	Situation at 30 September 1956	Dissolutions and resignations	Reorganiza- tion and entries	Situation at 31 March 1957
			October 1956-March 1957		
<i>Producer co-operatives</i>					
Numbers . . . . .	Number	3 907	2 290	923	2 540
Number of families . . . . .	Thousand	228	151	23 *	100 *
Number of members . . . . .		293	197	29	125
Arable area . . . . .	Thousand ha.	988	597	131 *	522 *
Total area . . . . .		1 284	763	147	668
<i>Producers' co-operative groups</i>					
Numbers . . . . .	Number	950	478	400	872
Number of members . . . . .	Thousand	50	27	13	36
Arable area . . . . .	Thousand ha.	136	68	56 *	124 *
Total area . . . . .		158	82	64	140
<i>Producers' associations</i>					
Numbers . . . . .	Number	..	..	..	1 494 <sup>a</sup>
Number of members . . . . .	Thousand	..	..	..	44 <sup>a</sup>

Sources : Statisztikai havi Közlemények, No. 2, 1957, p. 42; Népszabadság, 31 March and 19 April 1957 (end-March 1957).

NOTE.—Decreases and increases are calculated from information on numbers and areas at 31 December 1956.

<sup>a</sup> Refers to 15 March 1957.

**TABLE 8**  
**Official and free market prices of farm produce**  
*Forints*

	Unit	Obligatory delivery prices	State free purchase and additional state delivery prices			Free market prices				
		Since January 1952	1955/56 delivery season	1956/57 delivery season	21 March 1957	October 1955	October 1956	December 1956	January 1957	March 1957
Wheat . . . . .	Quintal	60	280	280	240	351	365	367	385	303
Rye . . . . .		34	..	260	220	326	325	327	357	277
Barley . . . . .		50	..	300	240	456	460	414	470	360
Maize . . . . .		52	240	300	240	331	430	431	441	326
Barley (for brewing) . . . . .		..	..	300	300	..	..	..	..	..
Sunflower seed . . . . .		80	..	280	280	..	..	..	..	..
Hay . . . . .		19	..	..	..	..	..	..	..	210 *
Fattened pigs . . . . .	Kg. of live weight	5.40	18-22 <sup>a</sup>	18-22 <sup>a</sup>	17-21 <sup>a</sup>	22.90	21.40	21.00	21.00	21.10
Pigs (above 50 kg.) . . . . .		..	..	..	..	18.70	18.00	16.00	18.00	21.40
Cows . . . . .		..	..	..	..	9.30	10.20	11.00	11.00	11.50
Draught horses . . . . .	Head	..	..	..	..	4 400	4 100	4 500	5 200	6 000

Sources : Obligatory delivery prices : *Magyar Közlöny* (Official Gazette), 6 January 1952, p. 81 ; State free purchase and additional State delivery prices : *Szabad Föld*, 17 and 31 July and 18 September 1955, *Szabad Nép*, 11 September 1955, *Népakarat*, 21 March 1957 ; Free market prices : *Statistikai Szemle*, Nos. 11-12, 1956, pp. 922-923, *Fontasabb adatok az 1956*

*október-decemberi Időszakról*, Budapest, pp. 66-67, *Statistikai havi Közlemények*, No. 2, 1957, pp. 52-53, *Szabad Föld*, 17 March 1957 and information received from the Central Statistical Office.

<sup>a</sup> According to weight in ranges of below 140, 140 to 160 and above 160 kilogrammes.

**TABLE 9**  
**Supply of artificial fertilizers and weed killers**

	Year 1955	Year 1956	First quarter		First half	
			1956	1957	1956 Actual	1957 Plan
<b>Supplies of artificial fertilizers</b>						
<i>Total supplies (thousand tons of actual weight) :</i>						
Nitrogenous fertilizers . . . . .	83	108	37.4	80.0	78.7	160
Phosphorous fertilizers . . . . .	143	123	24.1	22.6	63.3	80
Potash fertilizers . . . . .	30	26	6.1	10.0	14.1	21
All chemical fertilizers . . . . .	256	257	67.6	112.6	156.1	261
<i>Supplies per hectare of arable land (kilogrammes of actual weight) :</i>						
State farms . . . . .	184	167	47.8	76.3	109.7	..
Producer co-operatives . . . . .	89	94	28.6	7.6	49.6	..
Private farms . . . . .	16	12	1.4	13.0	8.0	..
National average . . . . .	47	48	12.5	20.8	29.0	48
National average (kilogrammes of pure nutrient) :	10.1	9.7	2.6	4.5	5.9	10
<b>Supplies of chemical weed killers (thousand hectares to be treated)</b>	92 <sup>a</sup>	..	..	..	..	295

Sources : *Statistikai havi Közlemények*, No. 1, 1957, p. 40 ; *Szabad Nép*, 17 November 1955 ; *Szabad Föld*, 10 March 1957 ; information received

from the Central Statistical Office (fertilizers) ; *Szabad Nép*, 16 November 1955 and *Népszabadság*, 22 February 1956 (weed killers).

<sup>a</sup> Refers to plan.

sunflower seed, pigs and cattle. Potatoes, vegetables, fruits, rice, poultry, eggs and lard are bought by both state and co-operative agencies on own account. The processing industries buy on contractual delivery terms, which have been extended to some new products such as barley for breweries and sunflower seed. Private traders can buy either as agents for the State or for immediate resale in retail trade. Town and country free markets are to continue with an unchanged constitution.

In preparation for the next purchase season, state free purchase prices, which had remained unchanged until 21 March, have been reduced markedly (see Table 8). But, in accordance with the new policy of farm incentives, substantial price increases were established for a number of products under the contractual delivery system.

Other measures to encourage higher farm output include a decision to increase fertilizer supplies (see Table 9). By importing 130,000 tons of nitrogenous fertilizer from Austria it should be possible to increase supplies to private farmers in the first half of the year to several times last year's level, even if both state farms and co-operatives receive as

much fertilizer as they did in the best of the last three years. The supply of farm machinery to private farmers should also increase. An ambitious production programme is being launched and, in addition, the stocks of machinery which have accumulated in the machine shops during the collectivization drives of the last two years should be turned to use.

The success or failure of the new policies is as yet impossible to evaluate. The harvest was bad last year (see Table 10), and grain stocks were critically low, while only a part of the necessary work in the fields was carried out in the last quarter. End-year stocks of bread grain were about 150,000 tons lower than 12 months earlier<sup>26</sup> and sufficient for little more than three months' normal consumption<sup>27</sup> (300,000 tons),

<sup>26</sup> Central stocks of bread grain (thousand tons) :

	30 November 1955	30 November 1956 <sup>a</sup>
Wheat . . . . .	386.6	290.0
Rye . . . . .	155.0	105.0
Total . . . . .	541.6	395.0

Source : Statisztikai Szemle, No. 11-12, 1956, p. 922; Fontosabb adatok, op. cit., p. 72.

<sup>a</sup> Including 26.4 thousand tons from aid-deliveries in November.

<sup>27</sup> Excluding self suppliers.

**TABLE 10**  
**Farm production and state purchases of major commodities**

	Unit	Production			State purchases		
		1954	1955	1956	1954	July/June 1955/56	July/Mar. <sup>a</sup> 1956/57
Wheat . . . . .	Thousand tons	1 660	2 131	1 845	787	1 159	890
Rye . . . . .		480	544	494	214	313	248
Bread grain . . . . .		2 140	2 675	2 339	1 001	1 472	1 138
Barley . . . . .		590	794	645	146	161	121
Oats . . . . .	Thousand tons	150	176	176	34	34	28
Maize . . . . .		2 550	2 912	2 034	311	450	166
Coarse grain . . . . .		3 290	3 882	2 855	491	645	315
Potatoes . . . . .		1 990	2 467	2 054	335	512	310
Sugar beet . . . . .	Thousands	1 920	2 241	1 948	.. <sup>b</sup>	.. <sup>b</sup>	.. <sup>b</sup>
Slaughter pigs . . . . .		3 200 <sup>c</sup>	3 900 <sup>c</sup>	3 900 <sup>c</sup>	1 295	1 784 <sup>c</sup>	1 807 <sup>c</sup>
Slaughter cattle . . . . .		..	..	..	..	371 <sup>d</sup>	411 <sup>e</sup>
All farm produce . . . . .	Thousand tons of wheat equivalent <sup>f</sup>	..	..	..	5 200	6 760 <sup>d</sup>	7 270 <sup>g</sup>

Sources : Production : Magyar statisztikai Zsebkönyv, 1956, pp. 97-103; Népszabadság, 10 March 1957 ; Statisztikai Szemle, Nos. 11-12, 1956, p. 922. Sales : Statisztikai havi Közlemények, No. 2, pp. 45-47 ; information received from the Central Statistical Office ; Szabad Nép, 17 November 1955 ; information supplied by the Government to the Seventh Session of the Committee on Agricultural Problems.

<sup>a</sup> Practically the whole of the year's deliveries are normally made within this period.

<sup>b</sup> Probably the full harvest was bought on a contractual basis.

<sup>c</sup> Refers to fattening seasons (March to February).

<sup>d</sup> Calendar year 1955.

<sup>e</sup> Calendar year 1956.

<sup>f</sup> The following conversion factors appear to have been used for calculating tons of wheat equivalent : 1.18 tons of maize ; 3.03 tons of potatoes or first-class hay ; 660 kg. of dry beans ; 200 kg. of slaughter cattle ; 100 kg. of fattened pigs (live weight). (These are equivalents according to the directives of deliveries.)

<sup>g</sup> Plan for 1956.

and state procurements and imports in the first two months of the new year added to supplies somewhat less than one full month's requirements (23,000 and 62,000 tons respectively). This means that the outstanding Soviet bread grain deliveries (about 200,000 tons in the first half of the year in addition to the 30,000 tons of aid deliveries already received since November) will permit requirements up to the harvest to be covered with only an extremely narrow margin.

Fodder supplies are, if anything, even more difficult in view of the shortfall of more than 1 million tons in last year's fodder grain harvest by comparison with 1955 and a fall of 400,000 tons in the potato crop. Less than half the sharp drop in state procurements of fodder grain is covered by the 150,000 tons expected from the Soviet Union in the first half of the year, and the incidence of these reductions is likely to be serious.

Plans for 1957 provide for a practically unchanged level of over-all agricultural output, but the output pattern of field production this year is likely to show very substantial changes in view of the abolition of obligatory deliveries and of obligatory sowings of bread grain. A dramatic diminution of the area under bread grain is known to have followed and hopes run high that industrial and fodder crops with high returns will take their place (Table 11), though sowings of some industrial crops, especially sugar beet, are reported to have been unsatisfactory.<sup>28</sup>

A future increase in pig breeding and a development of cattle breeding to high standards are also

<sup>28</sup> *Gazdasági Figyelő*, 18 April 1957.

Table 11: Distribution of sown area between bread grain and fodder crops

	Thousand hectares and percentage shares			1957 Expectation
	1954	1955	1956	
Arable area . . . . .	5417	5398	5390	5390
Bread grain . . . . .	1875	1803	1928	1553
Percentage share . . . . .	34.6	33.4	35.9	28.8
Fodder crops in the rotation . . . . .	2613	2616	2542	2700
Percentage share . . . . .	48.3	48.5	47.1	50

Sources: *Magyar Statisztikai Zsebkönyv*, 1956, pp. 91-110; *Statisztikai Szemle*, No. 12, 1954, p. 961; *Statisztikai Havi Közlemények*, No. 1, 1957, pp. 32, 34; *Népakarát*, 2 March and 11 April 1957.

hoped for, if adequate fodder supplies can be maintained, and production of vegetables, fruit and high quality wines is expected to rise. So far, total state procurements from farms in the first two more or less normal months since the abolition of obligatory deliveries have been very low in grain, milk and poultry, by comparison with last year, but as a whole not too bad in cattle, pigs and potatoes, partly because delivery arrears from October or earlier could now be collected. Supplies to town markets have shown a marked improvement in the first three months of the year.

Farmers seem now to be willing to sell, in the expectation of an adequate countervalue in terms both of money and of commodities. A stabilization of rewards in cash and kind will, however, be required so as to call for a permanent productive effort on their part. Moreover, greater reserve stocks than are at present available seem to be needed if a situation is to be avoided in which speculation on price increases is more attractive than immediate sales.

## 2. PERSONAL INCOMES AND THE DANGER OF INFLATION

### *Changes in Incomes in 1956 and 1957*

Pressure for wage increases mounted during 1956, partly reflecting the very low living standards of a substantial proportion of the families both of industrial workers and of farmers. Despite wage increases during the year, one-fifth of all wage and salary earners outside agriculture earned less than 800 forints a

Table 12: Distribution of wage and salary incomes outside agriculture

Average monthly income in forints	Distribution of wage and salary earners			
	Average 1955		June 1956	
	Thousands	Percentage	Thousands	Percentage
Below 800 . . . . .	500 <sup>a</sup>	26	380	20
800 - 1,200 . . . . .	800	42		
1,200 - 1,500 . . . . .	300	16	1520	80
Over 1,500 . . . . .	300	16		

Sources: *Szabad Nép*, 19 June 1956 and *Népakarát*, 26 January 1957.

<sup>a</sup> Of which 150,000 in industry.

month, and well over half must have earned less than 1,200 forints (see Table 12).

But, as can be seen from Table 13, the families in which wage income per earner is at or below 1,200 forints were on the average obliged to spend from 55 per cent to over 60 per cent of their total money incomes on food. For many thousands of families, especially those with several young children where the mother could not take full-time employment, an adequate level of food consumption required about 80 per cent of the family income.

For many young people unemployment, or the availability only of part-time work, made their situation worse than that of the older workers.<sup>29</sup> Others

<sup>29</sup> See *Economic Bulletin for Europe*, Vol. 8, No. 2, p. 26. As has been noted in Section 1, an unemployment problem for the young still exists in spite of the recent flight in great numbers. Cf. *Népszabadság*, 17 and 24 March 1957.

TABLE 13

Family income and expenditure of wage and salary earners in the town population, 1956

Monthly income per consumption unit (forints)	Number of families	Average number of wage and salary earners per family	Average number of members per family	Monthly labour income per wage and salary earner (forints)	Net monthly expenditure per family member (forints)	Percentage share in total expenditure	
						Food	Clothing
Below 500 . . . . .	252	1.21	4.36	980	339	63.4	13.3
501 to 700 . . . . .	481	1.43	3.76	1 094	471	59.2	14.7
701 to 900 . . . . .	426	1.56	3.22	1 144	613	55.0	17.0
901 to 1 100 . . . . .	272	1.62	2.84	1 218	766	50.9	17.5
Above 1 100 . . . . .	307	1.71	2.41	1 376	1 044	43.8	20.6

Source: Statisztikai havi Közlemények, No. 2, 1957, pp. 65-67.

gained, as compared with older workers, from their greater strength for heavy physical labour and their ability to amass high earnings when paid on piece rates; but against this advantage must be set the difficulty of entry into key supervisory or administrative jobs, which have not been increasing so fast recently as in the past and where older workers were already installed. Moreover, the younger people suffered particularly from the shortage of dwelling space, which often forced them to delay marriage or the starting of a family,<sup>30</sup> and from the fact that they had no stocks of furniture and other consumer durables acquired before the compression of consumption standards in 1950 and 1951.

Wage increases granted in recent months to all workers in industry and construction were supposed to be differentiated in favour of the lowest-paid workers—with 800 forints established as a fairly general minimum monthly rate of earnings, and with increases of 12 to 15 per cent for those earning less than 1,200 forints a month and 8 to 10 per cent for those with earnings between 1,200 and 1,500 forints. However, the method of implementing this decision—authorizations to each enterprise to raise wages by a flat 10 per cent of the payroll in the third quarter of 1956—gave rise to many complaints since it meant that enterprises with high earnings could substantially raise wages even in high income categories, while enterprises with low average earnings in that period were unable to raise wages even in the middle income ranges. The nearly general rise to 800 forints per month accorded to the lowest income group, which often implied an increase by 30 to 35 per cent, has

also created dissatisfaction among those receiving low increases in income brackets close to this limit.

The total wage increases granted have much surpassed the amount intended, and supplementary wages in kind, which are now given in many industries, represent a further addition to the increases initially accorded by the Government. The distribution of these earnings in kind is, however, extremely uneven.

Wage adjustment has naturally extended to other sectors also. Basic wages have been raised—e.g., for road transport workers, trade employees (8 to 12 per cent) and teachers (at a flat rate of 200 forints per month). A new wage system was introduced on the machine tractor stations and a minimum wage of 800 forints established for all agricultural workers.

Money receipts of farmers from state purchases rose by at least one billion forints in 1956 and a further rise is expected this year—from the abolition of obligatory deliveries and their replacement by state free purchases and contractual deliveries (see Table 14). Deductions from farm incomes are to be diminished by the abolition of discriminatory rates of farm income tax for the bigger owners (the so-called “kulaks”), of the special rates for childless people, the farm development contribution and the obligatory fire and hail insurance.<sup>31</sup> However, state free purchase prices were cut (see p. 75) and some increased charges have been imposed in the course of the last two months; for example, tariffs of machine stations have been raised for co-operatives by 12 per cent, and for individual farmers by 17 per cent, and farm machinery prices have risen.<sup>32</sup> Farm incomes as a consequence will

<sup>30</sup> This has been referred to in the party resolution already mentioned in footnote 6. According to the rules on dwelling allocations now in force, one out of each five available apartments has to be given to newly married couples (see *Népszabadság*, 7 March 1957).

<sup>31</sup> *Népakarat*, 15 February 1957; *Szabad Föld*, 24 February and 3 March 1957.

<sup>32</sup> Though the previous price discrimination against individual farmers, and in favour of co-operatives, has been abolished. (*Szabad Föld*, 6 January 1957.)

TABLE 14  
Actual and prospective changes in some main  
components of personal incomes

Billions of forints per year

	Income or deduction in 1956	Effects of changes on disposable incomes	
		Actual changes in 1956	Planned changes in 1957
Wages and salaries . . .	35.0	+2.6	+5.2 <sup>a</sup>
State procurements . . .	10.0	+1.0	+1.6 <sup>a</sup>
Transfer payments . . .	2.0	—	..
Total of items listed . .	47.0	+3.6	+6.8 <sup>a</sup>
<b>Deductions</b>			
Subscriptions to state loans	-1.1	—	+1.1
Agricultural taxes, etc. . .	-2.4	—	+0.6
Net total . . . . .	43.5	+3.6	+8.5

Sources: 1956 and changes in 1956: Wages and salaries: *Magyar statisztikai zsebkönyv*, 1956, pp. 164, 168 (1955); *Statisztikai havi Közlemények*, No. 1, 1957, p. 1 (for estimating changes in 1956); State procurements: *Közgazdasági Szemle*, No. 1, 1957, pp. 50, 52; (total money receipts of agriculture); *Statisztikai Szemle*, No. 10, 1956, p. 881 (share of State procurements in money receipts); *Népszabadság*, 10 February 1956 (changes in 1956); Transfer payments: *Magyar statisztikai zsebkönyv*, 1956, p. 170 (1955, assumed to be unchanged in 1956); State loan issue and agricultural taxes, etc.: *Economic Bulletin for Europe*, Vol. 8, No. 1, 1956, p. 27; cf. *Statisztikai Szemle*; Planned changes in 1957: *Népszabadság*, 13 January and 19 May 1957; *Népakarat*, 16 February 1957.

<sup>a</sup> As planned in May (Increases by 3.5 billion of wages and salaries and by 4.5 billion from State procurements were foreseen early in the year).

probably surpass last year's level by not more than around 2 billion forints.

The major question raised by the estimates in Table 14 of the effects on total personal disposable incomes of these various measures—including the decision not to issue a state loan in 1957—is whether sufficient goods and services can be made available for consumption this year to permit, without a rise in prices, an increase of aggregate disposable money incomes over the 1956 level of eight to nine billion forints or nearly 20 per cent. Estimates of changes in certain items in the Hungarian national accounts, shown in Table 20 in Section 4, suggest that under present plans the resources available for consumption will not in fact permit a rise in consumption in real terms on anything like this scale. An examination of the present market for consumers' goods throws some further light on the question.

#### Retail Trade and Stock Changes in 1956 and 1957

It might have been expected that the events of October and November, following on a considerable rise in money incomes during 1956 at a rate higher than had been planned, would have produced a rush

to turn cash into goods and a consequent appearance of shortages of goods in the shops or a price inflation. But in fact retail prices have so far remained remarkably stable, despite a rapid rise in retail trade turnover at the end of last year, though shortages—of less essential foods and manufactured consumers' goods—have been reported.<sup>33</sup>

A major factor accounting for this result was the rapid running down of commodity stocks (see Table 15). Two-thirds of the total value of stocks held in the state trading network in June had disappeared by the end of December, and total stocks in wholesale and retail trade were reduced by about 40 per cent during the last three months of the year.<sup>34</sup>

During the first three months of 1957 imports of consumers' goods flowed into the country in increasing quantities, mainly from the Soviet Union and from the other countries of eastern Europe. Total foreign aid deliveries up to the end of March amounted to about 1.4 billion forints at retail prices, of which the greater part were consumers' goods and fuel. The

<sup>33</sup> Details of retail trade turnover up to the first quarter of 1957 are shown in Appendix Table II.

<sup>34</sup> In the October-November period stocks fell by an amount corresponding to 80 per cent of sales of clothing, and 40 per cent of sales of other manufactures (see *Közgazdasági Szemle*, No. 11-12, 1956, p. 1323):

	Retail sales	Stock changes
	Billions of forints	
Clothing . . . . .	4.1	-3.3
Other manufactures . .	3.4	-1.4

TABLE 15  
Retail trade turnover and changes in commodity stocks  
Billion forints at current consumer prices

	Retail trade turnover		Stocks in wholesale and retail trade <sup>a</sup>		
	Plan	Actual	Retail	Wholesale	Total
1955 . . . . .	44.65	43.98	6.55	7.32	13.87
1956 Jan.-Sept. .	32.56	33.99	6.80	7.36	14.16
Oct.-Dec. .	12.84	14.27	4.46	4.30	8.76
1957 January .	10.25	11.00	4.65	4.10 <sup>b</sup>	8.75
February .			5.24	4.20 <sup>b</sup>	9.44
March . .			5.99	5.29	11.28

Sources: Appendix Table II: *Szabad Nép*, 29 March 1955; *Statisztikai havi Közlemények*, No. 1, 1957, p. 55; No. 2, 1957, pp. 60, 61; *Statisztikai Szemle*, No. 11-12, 1956, p. 925; *Fontosabb Adatok*, op. cit., p. 38.

<sup>a</sup> Stocks at end of period. Commodity stocks changed as follows in the course of 1956:

	End-June	23 October	29 November
Billions of forints	14.4	13.2	8.0

<sup>b</sup> Estimated on the basis of the price ratio between current wholesale purchase prices and current consumer prices on 31 December 1956 (100 : 124.4).

gradual recovery of home production of manufactured consumers' goods and some switch from exports to the home market, together with satisfactory deliveries of food to State procurement agencies and the free market taken together, also contributed to raising total supplies of foods and other consumers' goods to retail trade by about 3.0 billion forints above the corresponding 1956 level. Stocks have risen during the quarter, despite a level of sales 10 per cent greater than in the first quarter of last year. Nevertheless, shortages of clothing, ironmongery, technical products and other metal consumers' goods are reported both in the towns and in the countryside.<sup>35</sup>

The planned increase in imports this year (see the following section) should help to meet domestic demand for consumers' goods through direct import of manufactures and by providing materials for the light industries. But direct imports of consumers' goods seem unlikely to account for a much greater share of total imports than in previous years. Moreover, there may be some risk of the planned increase in total imports (to about 17 per cent above the 1956 level) not being achieved, as more than half of the new credits of 3.2 billion forints intended to meet this year's balance-of-payments deficit had been spent by 10 May.

So far as domestic production is concerned, some of the factors which may influence supplies both from agriculture and from industry have already been mentioned in this and the preceding section. Gross output of light and food industries is planned to rise this year by about 9 per cent. The home market supply of consumer manufactures may, however, increase at a somewhat higher rate since it is planned to decrease the share of output exported.<sup>36</sup>

It seems, on the whole, that further large increases in supplies of goods to consumers, above the levels of the first quarter of the year cannot be regarded as fully assured: a problem of bringing total money incomes and total supplies into balance therefore remains.

#### *The Balancing of Consumer Demand and Supplies of Goods*

The campaign just launched to reduce industrial costs suggests that, unless raw material supplies are sufficient to allow a rapid rise in production and in output per head, either a fall in industrial wages or a rise in unemployment may bring about a fall in

total money incomes below the levels at present foreseen.

Of the wage settlements so far implemented this year, about 500 million forints are officially regarded as not being in accordance with the issued directives<sup>37</sup> and in industry alone 14.5 per cent of all increases are regarded as unjustified, as compared with 12.5 per cent for the whole national economy. But the effect on industrial costs of these wage increases has been accentuated by the fall in output per head in industry, due partly to the policy so far pursued of accepting some under-employment of the labour force—rather than dismissing workers—when shortage of materials or fuel has prevented full-scale production.

Since 1 April the Government has been trying to reduce wage costs outside agriculture to the level of the third quarter of 1956, though with certain modifications. Certain types of cost increase have been authorized on strict conditions and subsidies are to be granted or turnover taxes reduced<sup>38</sup> so as to offset the inflationary effect on prices.<sup>39</sup> But enterprise managers and the workers themselves are expected, by their own efforts, to bring about a considerable reduction from present cost levels.

Excess costs—according to the rules issued on 9 February—can be incurred without penalties after the end of March only in the following cases:

- (a) If wage increases have been authorized by the Government (including authorized wage payments in kind);
- (b) If additional wage costs have arisen from a reduction of excessive work norms on authorization of the supervising industrial authority;
- (c) If additional costs are a consequence of low capacity utilization on a level approved by the supervising industrial authority.

These new regulations will greatly reinforce managerial interest in cost reductions in general and in wage cost reductions in particular.

It is probably expected that rising productivity and output stimulated, *inter alia*, by these measures will help to relieve the pressure on the consumer-goods market in future. But it seems likely that some part of any relief will be achieved at the expense of a fall in the incomes and living standards of the families

<sup>37</sup> *Gazdasági Figyelő*, 11 April 1957.

<sup>38</sup> See *Népszabadság*, 21 March 1957.

<sup>39</sup> Producer prices are to remain unchanged until the introduction of a completely revised system of producer prices on 1 January 1958. The Government, which had so far approved all official prices (altogether 700,000 price quotations according to the old regulations) has transferred a substantial part of its power to a newly established price board (see *Népakarat*, 19 February 1957).

<sup>35</sup> *Népszabadság*, 20 March 1957; *Szabad Föld*, 10 March 1957.

<sup>36</sup> See *Népszabadság*, 13 January 1957, and *Közgazdasági Szemle*, No. 2, 1957, p. 188.

of workers who become unemployed as a result of the drive for lower costs, while those remaining in employment may be able to increase their standards of consumption. It is clearly also contemplated that a closing of the gap between money incomes and supplies of consumers' goods may be brought about by price increases if other methods fail. So far, only prices of alcoholic drinks, metal-made consumers' goods, building materials and of farm machinery have

been raised, but the authorities have hinted at the possibility of more general increases.<sup>40</sup>

<sup>40</sup> The Chairman of the Price Board has referred to this possibility in the following terms: "Our national economy disposes of sufficient reserves for stabilizing consumer prices still for some time to come, even if there is no improvement in productivity and slackness continues to prevail over industry—as we have done so for some months already. We have, however, no reserves of the kind which should permit us to impede a cumulative transmittal of unnecessarily high production costs over consumer prices." (See *Népszabadság*, 17 March 1957.)

### 3. FOREIGN TRADE, AID AND CREDITS

#### *Trade and Aid from October 1956 to March 1957*

The fall in imports in the last quarter of 1956 to less than half the planned level, and the still greater fall in exports to little more than one-fifth of the planned level, was succeeded by a very large increase in imports in the first quarter of this year. Exports also rose, but for the six months taken together remained below the previous year's level, while the rate of import over the full six months was well above that of the same period of 1955/56. Trade with other eastern European countries and the Soviet Union was maintained to a much greater extent than trade with western countries as shown in Table 16:

Table 16: Imports and exports

Billions of foreign exchange forints

	Total trade		Of which: trade with eastern trading region	
	1956 Fourth quarter <sup>a</sup>	1957 First quarter <sup>b</sup>	1956 Fourth quarter <sup>a</sup>	1957 First quarter <sup>b</sup>
<b>Imports</b>				
Value . . . . .	726	2 028	551	1 632
Change from same period of previous year	-485	+760	..	+805
<b>Exports</b>				
Value . . . . .	505	1 099	318	674
Change from same period of previous year	-1 739	-456	..	-186

Sources: *Közgazdasági Szemle*, No. 2, 1957, p. 182; *Statistikai Közlemények*, No. 1, 1957, p. 95, No. 2, 1957, p. 71, and information received from the Central Statistical Office.

<sup>a</sup> Imports for home use and exports from home production.

<sup>b</sup> Total imports and total exports and re-exports.

Foreign aid deliveries, arriving mainly in the fourth quarter of last year, are excluded from the above figures, but represented an important addition to supplies since they met particularly urgent needs for fuel, food, clothing, pharmaceuticals and building materials. Of the eastern deliveries (three-fifths of the total) 59 per cent was food, 27 per cent clothing and the rest building materials and fuel (9 and 5 per

cent respectively).<sup>41</sup> In the Red Cross deliveries from western countries, food, clothing and pharmaceuticals had a substantial share.<sup>42</sup>

Table 17: Foreign aid deliveries  
November 1956 to March 1957<sup>a</sup>

Millions of foreign exchange forints

	Eastern European countries, the Soviet Union and Yugoslavia	International Red Cross	Total
<b>Offers . . . . .</b>	410	352	762
<b>Actual deliveries</b>			
November 1956 . . . . .	106	47 <sup>b</sup>	233
December 1956 . . . . .	80		
January 1957 . . . . .	9	6 <sup>b</sup>	10
February 1957 . . . . .			
March 1957 . . . . .	5	76	86
<b>Total . . . . .</b>	200 <sup>c</sup>	129	329

Sources: *Fontosabb adatok*, op. cit., pp. 28, 29, 72; *Népakarat*, 10 March 1957; information received from the Central Statistical Office (eastern countries); *Népakarat*, 17 February 1957 and information received from the International Committee of the Red Cross (Red Cross deliveries).

<sup>a</sup> Excluding aid by China to the amount of 90 million foreign exchange forints in foreign currency (£2.9 million).

<sup>b</sup> Deliveries from 1 to 10 January are included with the figure for 1956.

<sup>c</sup> On the basis of wholesale prices a break-down by countries shows as follows: Soviet Union 49 per cent; eastern Germany 12.4 per cent; Poland 12.2 per cent; Czechoslovakia 9 per cent; Rumania 8.3 per cent; Bulgaria 5.4 per cent; Yugoslavia 2.3 per cent; other eastern countries (excluding China) 1.4 per cent.

#### *The New Foreign Credits*

Hungary has earned consistently large credit balances on its visible trade accounts with eastern European countries in recent years, but has incurred heavy deficits in its western trade relations. External short-term debt is stated to have risen from 1.7 billion foreign exchange forints in 1953 to 3.1 billion in 1956, which suggests that deficits on account of current invisible transactions and capital payments to eastern countries during these years must have been very large (see Table 18).

<sup>41</sup> Distribution between commodity groups is based on values in wholesale prices.

<sup>42</sup> See Appendix Table IV.

Table 18 : Trade balances by main trading regions

Year	Million foreign exchange forints		
	Export (+) or import (-) surplus on visible trade <sup>a</sup>		
	All countries	Eastern countries	Western countries
1952 . . . . .	-10	+45	-55
1953 . . . . .	+373	+595	-222
1954 . . . . .	+145	+444	-299
1955 . . . . .	+874	+1 309	-435
1956 . . . . .	+426	+268	+158
1957 Plan . . .	-2 900 <sup>b</sup>	..	..

Sources: Statisztikai havi Közlemények, No. 1, 1957, p. 63; Népszabadság, 5 January 1957.

<sup>a</sup> Balances of total imports and exports (including re-exports).

<sup>b</sup> Balance of imports for home consumption and exports from home output.

	1956	1957 Plan
Imports . . . . .	4 713	5 500
Exports . . . . .	5 282	2 600
Trade balance . . .	+569	-2 900

Source: Népszabadság, 5 January 1957, Közgazdasági Szemle No. 2, 1957 (imports for home consumption and exports from home production).

The over-all deficit on visible trade was originally expected to amount to nearly 3 billion forints in 1957. Of the 3.2 billion forints (1.1 billion roubles) of new credits available for the year, more than half had been spent by 10 May.<sup>43</sup>

These new foreign debts incurred by Hungary are about equal to the reported existing short-term debt which was owed largely to western countries. The new Soviet loan will carry a rate of interest of 2 per cent per annum, and it is to be repaid from 1961 onwards in yearly instalments of 100 million roubles from the receipts of exports to that country.<sup>44</sup> The Polish loan is to be repaid over the four years 1959 to 1962.

Table 19 : New loans of eastern European countries to Hungary

Country	Million roubles	
	Total	Free currency
Bulgaria (9 January 1957) . . . . .	7	—
Eastern Germany (9 January 1957) . .	60	—
China (15 January 1957) . . . . .	200	100
Poland (February 1957) . . . . .	40	—
Czechoslovakia (24 March 1957) . .	75	—
Soviet Union (28 March 1957) . . .	750	200
	1 132	300

Sources: Népszabadság, 29 March 1957 (Soviet loan) and the issues quoted as release dates.

NOTE.—The dates in parentheses refer to the dates of press releases concerning these loans.

<sup>43</sup> Népszabadság, 11 May 1957.

<sup>44</sup> The new loan was consolidated with the credit of 100 million roubles (of which 25 million roubles in free foreign exchange) according to agreement of 4 October 1956 (see Szabad Nép, 5 October 1956) and a later smaller credit in free currency to the value of 15 million roubles to a consolidated loan to an amount of 865 million roubles, which is due for amortization in the ten years following 1961 (see Népszabadság, 29 March and 13 April 1957).

The agreement with the Soviet Union also provided for cancellation without payment of the residual 1 billion foreign exchange forints still due to be paid on the purchase of the Soviet share in the former Soviet and Hungarian mixed companies (and other former German property).<sup>45</sup> Furthermore, a moratorium was granted on the payment of capital and interest to the amount of 150 million roubles (440 million foreign exchange forints) due on previously accumulated debts. Finally, the value of the rouble as applied to payments for transport, travel and other services was reduced from 3.00 to 1.50 forints. This is estimated to imply an increase in net foreign exchange earnings of about 20 million roubles annually.<sup>46</sup> Czechoslovakia has also agreed to the suspension of debt service on 25 million roubles worth of commercial debts.<sup>47</sup>

### The Composition of Import and Export Trade

As has been mentioned earlier, import requirements have substantially increased as a result of the depletion of stocks of both producers' goods and consumers' goods, and the bridging of the fuel and grain deficit also calls for very considerable additional imports. An over-all rise in imports of 17 per cent above the 1956 level is planned for this year and it seems that the commodity structure is not likely to differ very much from last year's, though the share of machinery in the total may be somewhat lower.<sup>48</sup>

The Soviet deliveries under the March agreement will amount to 2½ times last year's imports,<sup>49</sup> and have an important role to play in bridging the gap in supplies not only of fuel and grain, but also of basic materials for heavy industry. Fuel and raw materials, of which the listed items are all in the heavy industrial group, make up more than 80 per cent of total imports from the Soviet Union.<sup>50</sup> Half the imports on credit from the eastern European countries is scheduled to

<sup>45</sup> The total purchase price was more than 4 billion foreign exchange forints, of which 1 billion has already been cancelled at an earlier stage (see Népszabadság, 10 April 1956).

<sup>46</sup> A revision of these accounts from 1950 onwards on the basis of the new exchange rate should result in a credit balance in favour of Hungary to a total of 80 to 90 million roubles (see Népszabadság, 12 April 1957).

<sup>47</sup> Népszabadság, 24 March 1957.

<sup>48</sup> At an early stage a marked decline in the machinery share was expected in favour of consumer goods and raw materials (see Népszabadság, 5 January 1957).

<sup>49</sup> The share of the Soviet Union in total imports is to increase from 26 per cent in 1956 to 54 per cent this year. Some details are given in Appendix Table III.

<sup>50</sup> Népszabadság, 10 and 13 April 1957. The quantity of shipments reaches 5 million metric tons of which 4.3 million tons are raw materials and semi-finished products and 650,000 farm produce.

consist of raw materials, 20 per cent will be machinery and 30 per cent manufactured consumer-goods.<sup>51</sup>

It is so far uncertain how Hungary will be able to fulfil its export programme of 2.6 billion foreign exchange forints, or about half the 1956 rate of exports, though plan fulfilment in the first three months of the year was satisfactory. The bulk of exports<sup>52</sup> will consist, as in previous years, of machinery, instruments and apparatus (31 to 33 per cent) and—harvest results permitting—of farm produce

<sup>51</sup> *Népszabadság*, 9 January, 5 February and 24 March 1957.

<sup>52</sup> On the planned commodity structure of exports, see *Közgazdasági Szemle*, No. 2, 1957, p. 188.

(about 30 to 35 per cent).<sup>53</sup> Exports of fuels and materials are to remain about what they have been, while, as has already been noted, some reduction may occur in the share of manufactured consumer goods in total exports. The Soviet Union is planned to take 43 per cent of total exports. Of these, 75 per cent are to be machinery and precision instruments.<sup>54</sup>

<sup>53</sup> With exports at 400 million forints and imports at 700 million—an import surplus of farm produce was expected for the first half of the year (see *Népszabadság*, 5 January 1957). The year's trade in farm produce is to balance on a level of 800 to 900 million forints which if the higher figure is reached implies imports for the second half of the year of 200 million forints and exports of 300 million forints.

<sup>54</sup> *Népszabadság*, 13 April 1957.

#### 4. THE ALLOCATION OF RESOURCES IN 1957

The complete economic plan for 1957 has not yet been published, but enough details have become available to reveal the main lines of development that are now foreseen by the Hungarian Government. These are summarized, with some comparable data for earlier years, in Table 20.

The total resources available for domestic use in 1957 are planned to increase by about 9 per cent over the 1956 level, and will be about 4 per cent above that of 1955. But the increase in availabilities is almost entirely attributable to the change in the balance of foreign trade from a small surplus to a large deficit: national income is expected to rise by only 1 per cent over last year's level.

The heavy drawing on stocks last year and the change from a foreign trade surplus to a large deficit between 1956 and 1957 are important elements accounting for the very low level of over-all accumulation in both years, but domestic gross fixed investment is also expected to continue to decline this year. The sacrifice of the rate of domestic investment and over-all accumulation which is involved in the attempt to maintain or increase the rate of growth of consumption is, indeed, one of the most striking features of the year's plans. Personal and social consumption together are expected to absorb about 95 per cent of national income in 1957, and the implied rise over the 1956 level seems to be of the order of 5½ per cent. This is far short of the rise in personal disposable money incomes that is in prospect, and which was discussed in Section 2, above. Some diversion of resources from public consumption—including defence—to personal consumption is intended, but it would have to be very large if the gap were to be filled completely.

Within the investment sector the shift of emphasis towards the satisfaction of consumer needs is also

apparent, with house-building and other social investment accounting for 40 per cent of the total according to this year's plans as compared with 22 per cent in the first nine months of 1956 (Table 21). As a consequence of the over-all cut in investment, work has been suspended on 109 industrial sites.<sup>55</sup>

This sharp cutting back of investment activity, and the sudden change in its pattern, must be both immediately wasteful of resources and detrimental to the long-run prospects for expansion—particularly as the solution of some of the structural problems of the Hungarian economy (e.g., the inadequacy of fuel supplies) will be delayed. But it was inevitable in present conditions. The production plans for 1957 depend on the assumption of a very rapid rise in output per worker in industry in the course of this year, and this can hardly be realized unless adequate incentives, in the form of *inter alia* rising real wages, are provided.

A leading article in the official newspaper of the Hungarian Socialist Workers' Party (*Népszabadság*, 20 March 1957) stated: "This [the 5 per cent rate of accumulation] most certainly cannot be maintained for more than a short time, because otherwise we should have to renounce an expansion of production and an improvement of welfare as well as to the construction of socialism. . . . We do not intend, on the other hand, to revert to those times when—as between 1950 and 1953—the warning was constantly sounded, 'Let's not eat the hen that will lay tomorrow's golden egg', while as a consolation for falling living standards only tomorrow's golden eggs were left."

The critical questions for the immediate future are

<sup>55</sup> Of which 75 in the mining and power, metal-making and metal-using and chemical sectors, 5 in the building materials sector, 6 in light industry and 23 in food processing.

TABLE 20

Changes in income, investment and output, 1953 to 1957

Index numbers—1953=100

Figures in italics are percentages of national income

	1954	1955 Plan	1955	1956 Plan	1956	1957 Plan
Net national product . . . . .	96	104	105	110	98	99 <sup>a</sup>
Accumulation . . . . .	72 <i>17.8</i>	..	86 <i>19.9</i>	90 20	33 8	17 <sup>b</sup> <i>4 <sup>b</sup></i>
Gross fixed investment . . . . .	70	58	67	76	55	49
Value at plan prices of gross output of:						
Heavy industry . . . . .	96	100	106	117	99	95
Light industry . . . . .	109	116	116	119	102	111
Total industry . . . . .	102	108	111	118	101	103
Building and contracting . . . . .	88	..	94	..	94	..
Agriculture . . . . .	102	109	114	117	106	106
Personal and social consumption . . . . .	122 <i>82.2</i>	..	131 <i>80.1</i>	137 80	140 92	148 96
Real wages . . . . .	120	..	122	127	132	..
Farm real incomes . . . . .	104	..	115	118	122	..
Retail trade turnover . . . . .	120	130	126	131	138	..

Sources: 1954, 1955: Magyar statisztikai zsebkönyv, 1956, pp. 12-13, 54-56 (national income, its end-uses, series on output); Statisztikai havi Közlemények, No. 1, 1957, p. 72; Gazdasági figyelő, 14 March 1957 (accumulation, real wages); Közgazdasági Szemle, No. 1, 1957, p. 50 (farm real incomes). 1955 (plan): Szabad Nép, 9 and 29 March 1955 (national income, industrial and agricultural output); Szabad Nép, 20 to 22 April 1955 (investment, heavy and light industry); Szabad Nép, 29 March 1955 (retail trade). 1956 (plan): Szabad Nép, 10 February 1956 (national income, industrial and agricultural output, consumption); Szabad Nép, 17 November 1955, Közgazdasági Szemle, No. 12, 1955, pp. 1429, 1434, 1435 (industry, wages, farm incomes, retail trade). 1956: Gazdasági figyelő, 14 March 1957

(national income); Statisztikai havi Közlemények, No. 1, page 7: information received from the Central Statistical Office and Bulletin, No. 2, 1955, page 96 (industry); agriculture estimated from national income and its known constituents; consumption assumed to move parallel with wages and farm incomes in Table 14. 1957 (plan): Népszabadság, 17 May 1957 (national income, investment, industry, agriculture); Gazdasági figyelő, 14 March and 2 May 1957 (accumulation, foreign balance, consumption).

<sup>a</sup> Including net foreign balance: 108 (1953 = 100).

<sup>b</sup> Domestic net investment, 51 (1953 = 100)—i.e., 12 per cent.

whether the foreign aid or credits available will be sufficient to permit the maintenance of raw material and fuel supplies sufficient to support the planned growth of over-all output and whether the rise in real incomes—and other factors affecting labour productivity—will be adequate to call forth the level of output per worker employed on which other plans depend.

In the longer term, the critical issue is likely to be the timing and scale of the change back towards a higher rate of accumulation. Any delay weakens the balance of payments or the domestic capital structure: on the other hand, a too precipitate slowing down of the rate of growth of real consumption would raise its own problems.

Table 21: Gross fixed investment by sectors

	1953	1954	1955	1956 Plan	1956 <sup>a</sup>	1957 Plan
	Percentage distribution					
Housing . . . . .	6	9	10	14	15 <sup>b</sup>	30
Other communal social and cultural investments . . . . .	12	13	10	6	7 <sup>b</sup>	10
Mining and electric power . . . . .	16	18	18	19	47	23
Other industries . . . . .	34	24	25	26		
Agriculture, transport and trade . . . . .	26	33	36	33	29	21
Other . . . . .	6	3	1	2	2	—
Gross fixed investment in billions of forints . . . . .	16.8	11.8	11.2	12.8	10.3	8.2

Sources: Magyar Statisztikai Zsebkönyv, 1956, pp. 44-48, and information received from the Central Statistical Office; Statisztikai havi Közlemények, No. 1, 1957, p. 73; Népszabadság, 10 April 1957; Szabad Nép, 17 and 18 February 1955 and 10 February 1956; Közgazdasági Szemle, No. 12, 1955, pp. 1430, 1431; Társadalmi Szemle, No. 12, 1955, pp. 6, 13 (plan for 1956); Népszabadság, 17 May 1957 (plan for 1957).

<sup>a</sup> First three quarters at an annual rate. Planned investment only.

<sup>b</sup> Distribution estimated from known total of housing construction during the whole year.

TABLE I  
Planned and actual output of selected products

Product	Unit	1956	1956	1957	1956	1956	1957	1957
		Whole year	Whole year	Whole year	Oct.-Dec.	Oct.-Dec.	Jan.-March	Jan.-March
		Plan	Actual	Plan	Plan	Actual	Plan	Actual
Coal . . . . .	Million tons	23.75	20.59	20.50 <sup>a</sup>	6.14	2.45	4.00	4.38
Crude oil . . . . .		1.74	1.20	0.63	0.44	0.13	..	0.17
Electric power . . . . .	Million MWh	5.82	5.19	5.30	1.61	0.81	..	1.11
Pig iron . . . . .	Million tons	0.85	0.74	0.758	0.21	0.09	..	0.12
Crude steel . . . . .		1.65	1.43	1.318	0.41	0.14	..	0.24
Hot-rolled steel . . . . .		0.93	0.79	0.773	0.24	0.06	..	0.16
Bauxite . . . . .	Thousand tons	1 200	892	..	288	67	..	133
Alumina . . . . .		182	153	..	48	16	..	22
Aluminium . . . . .		41.0	34.8	..	10.75	3.43	..	2.35
Sulphuric acid . . . . .	Thousand tons	129.0	102.0	..	33.6	11.0	..	21.0
Caustic soda . . . . .		15.0	12.1	..	3.80	1.26	..	1.78
Nitrogenous fertilizer . . . . .		210.0	94.4	..	63.2	8.0	..	14.9
Phosphorous fertilizer . . . . .		190.0	149.8	..	51.2	18.4	..	29.1
Cement . . . . .	Million tons	1.24	0.99	0.86	0.23	0.10	..	0.11
Bricks . . . . .	Billion	1.33	1.19	..	0.40	0.24	0.117	0.17
Plate glass . . . . .	Million m <sup>2</sup>	3.40	3.53	..	1.10	1.04	..	1.17
Turret lathes . . . . .	Units	2 516	1 632	..	793	138	..	373
Drills . . . . .		2 477	2 556	..	510	282	..	661
Milling tools . . . . .		981	740	..	200	41	..	134
Motor trucks . . . . .		3 907	2 942 <sup>b</sup>	..	1 137	324	..	756
Wheeled tractors . . . . .		1 600	2 056	..	50	60	..	200
Combine harvesters . . . . .		1 795	1 464	..	500	118	..	154
Wireless sets . . . . .	Thousands	391.7	306.7	..	100.7	28.9	50.0	93.0
Motor-cycles . . . . .		34.5	28.32	..	9.57	2.67	3.6	6.81
Bicycles . . . . .		240.0	187.1	..	60.2	20.0	30.0	42.1
Cotton cloth . . . . .	Million m <sup>2</sup>	215.6	180.7	..	54.6	17.8	..	39.9
Woollen cloth . . . . .		24.68	19.48	..	6.25	2.15	6.3 <sup>c</sup>	4.7
Knitted wear . . . . .	Thousand tons	5.51	4.77	..	1.44	0.58	..	1.41
Leather . . . . .	Million of forints	..	..	..	..	..	..	225
Footwear . . . . .	Million pairs	12.56	10.73 <sup>d</sup>	..	3.03 <sup>e</sup>	1.32 <sup>e</sup>	..	2.62
Sugar . . . . .	Thousand tons	316.8	216.5	..	255	154	..	53
Sweets . . . . .		19.7	14.14	..	6.50	3.03	..	..
Vegetable oil . . . . .		18.0	13.17	..	4.80	2.09	..	..
Sunflower-seed oil . . . . .		49.6	35.91	..	..	..	..	..
Beer . . . . .	Million hectolitres	2.5	2.41	2.50	0.38	0.21	0.26	0.29
Cigarettes . . . . .	Billion	13.55	12.22	..	3.41	1.87	3.36	3.59

Sources : 1956 : *Statistikai Szemle*, No. 11-12, 1956, p. 918 ; *Statistikai havi Közlemények*, No. 1, 1957, pp. 13-30, 89-90. Plan for 1957 : *Népszabadság*, 17 May 1957; *Népakarat*, 27 February 1957 (earlier plans for coal); 24 March 1957 (iron, steel, rolled steel); 13 February 1957 (beer). Plan for first quarter of 1957 : *Népakarat*, 4 April 1957 (coal), 23 February 1957 (bricks); 8 February 1957 (consumer hardware); 19 March 1957 (woollen cloth); *Népszabadság*, 5 March 1957 (cigarettes) and sources quoted above for yearly plan (beer). First quarter 1957 : *Népakarat*, 20 April 1957 (leather); *Statistikai havi Közlemények* and information received from the Central Statistical Office.

<sup>a</sup> This is a plan announced in May (replacing one of 18.3 million tons announced in January and one of 19.5 million tons announced in February).

<sup>b</sup> In addition, 28 dumpers have been produced.

<sup>c</sup> Plan for the second quarter.

<sup>d</sup> Of which : all shoes = 10.04 million pairs.

<sup>e</sup> Only shoes.

TABLE II  
Retail trade turnover by commodity groups and commodities

Quantities or values at current prices

Commodity	Unit	1956	1956	1956	1957	1957
		Whole year	Whole year	October-December	January-March	January-March
		Plan	Actual	Actual	Plan	Actual
Total turnover . . . . .	Billion forints	45.40	48.26	14.27	10.25	11.00
All food . . . . .		16.40	17.38	4.95	..	3.60
Bread . . . . .	Thousand tons	..	732	185	..	157
Flour . . . . .		..	264	79.4	..	54.5 <sup>a</sup>
Sugar . . . . .		..	160	51.4	..	32.3 <sup>a</sup>
Meat . . . . .		..	82.8	20.9	..	..
Lard . . . . .		49.4	52.0	13.4	..	7.7 <sup>a</sup>
Cigarettes . . . . .	Billion	..	12.9	2.84	3.5	3.2
All clothing . . . . .	Billion forints	11.20	12.97	5.16	..	3.10
Cotton cloth . . . . .	Million m <sup>a</sup>	..	39.67	13.91	..	15.8
Woollen cloth <sup>b</sup> . . . . .		..	10.44	4.15	..	3.38
Knitted wear . . . . .	Million forints	..	1 204	305	..	364
Men's suits . . . . .	Thousand	..	764	170	..	214
Women's suits . . . . .		..	652	120	..	167
Leather footwear . . . . .	Thousand pairs	9 400	7 740	3 247	..	3 428
Other manufactures . . . . .	Billion forints	9.70	10.84	2.95	..	2.55
Sewing machines . . . . .	Thousand	..	..	..	3.7	..
Washing machines . . . . .		..	..	..	2.7	..
Wireless sets . . . . .		238	244	65.5	69.0	54.3
Motor-cycles . . . . .		..	20.7	4.1	4.2	5.8
Bicycles . . . . .		..	166	20.7	60.0	59.8
Public catering . . . . .	Billion forints	8.10	7.07	1.21	..	1.75

Sources: Statisztikai havi Közlemények, No. 1, 1957, pp. 54, 56, 57, 95; Közgazdasági Szemle, No. 12, 1955, pp. 1434, 1435 (1956); Népszabadság, 1 January 1957; Népszavak, 8 February 1957 (plan for January-March 1957); Gazdasági Figyelő, 18 April 1957; Népszabadság, 14 April 1957; information received from Central Statistical Office.

<sup>a</sup> Estimates based on turnover between 1 January and 15 March show the following results (3-monthly rates in thousand tons): flour 40.5, sugar 25.1, lard 6.5 (January-March 1957).

<sup>b</sup> Includes woollen-type synthetic fibre cloth.

TABLE III  
Some main items of imports by commodities with details of imports from the Soviet Union

Commodity	Unit	Total imports			Imports from the Soviet Union					
		1955	1956	1957 Plan	1955	1956	1957 Plan	1955	1956	1957 Plan
		Quantitative units						Percentage of total imports		
Coal . . . . .	Thousand tons	792	816	2 000	10	147	1 200	1.3	18	60
Crude oil . . . . .		228	328	1 060	198	284	900	87	87	85
Fuel and gas oil . . . . .		81	129	..	..	..	..	..	..	..
Iron ore . . . . .		1 356	1 118	1 200	940	1 088	1 200	71	97	100
Pyrites . . . . .		103	87	..	—	—	—	—	—	—
Coking coke . . . . .		1 237	1 051	1 000	385	319	500	31	30	50
Pig iron . . . . .		99	119	..	..	55	110	..	46	..
Rolled steel . . . . .		70	57	150	..	..	150	..	..	100
Aluminium . . . . .		1.6	0.3	..	..	..	8	..	..	..
Copper . . . . .		8.2	8.7	10	..	..	8	..	..	80
Lead . . . . .		5.8	7.8	..	1.7	..	..	30	..	100
Caustic soda . . . . .		30	31	..	22	..	..	77	..	..
Ammoniated sodium . . . . .		29 <sup>a</sup>	27 <sup>b</sup>	..	7	..	..	24	..	..
Potash fertilizer . . . . .		32	26	..	..	..	..	..	..	..
Phosphate rock . . . . .		80	114	..	65	..	..	81	..	..
Raw cotton . . . . .		48	40	..	24	23	..	55	58	..
Washed wool <sup>c</sup> . . . . .		4.3	3.5	..	..	..	..	..	..	..
Raw jute . . . . .		7.5	6.5	..	..	..	..	..	..	..
Rayon . . . . .		7.9	8.9	..	..	..	..	..	..	..
Dyes . . . . .	Million foreign exchange forints	61	51	..	..	..	..	..	..	..
Raw ox hides . . . . .	Thousand tons	18.5	8.1	..	..	..	..	..	..	..
Cellulose . . . . .		30	29	..	..	..	..	..	..	..
Newsprint . . . . .		12	11	..	..	..	..	..	..	..
Pulpwood . . . . .		246	224	..	..	..	..	..	..	..
Mining timber . . . . .	Thousand m <sup>3</sup>	561	591	..	..	..	..	..	..	..
Sawn softwood . . . . .		514	454	..	94	187	400	20	41	..
Fuel wood . . . . .	Thousand tons	275	382	..	..	..	..	..	..	..
Bread grain . . . . .		385	185	..	..	..	450	..	..	..
Coarse grain . . . . .		107	23	..	..	..	200	..	..	..

Sources: Statisztikai Havi Közlemények, No. 2, pp. 22, 45-46, 76-77; Statisztikai Szemle, Nos. 11-12, p. 927; Fontosabb adatok, op. cit., p. 70 (total imports, 1955, 1956). Népszabadság, 24 March and 10 April 1957; Gazdasági figyelő, 11 April 1957; cf. Statisztikai Szemle (Soviet imports, 1955, 1956). Népszabadság, 29 March and 13 April 1957 (total and Soviet imports planned for 1957).

<sup>a</sup> Estimated from eleven-month results assuming an unchanged rate of imports for the whole year.

<sup>b</sup> January-November (imports in December were mostly low).

<sup>c</sup> Including combed tops.

TABLE IV  
Commodity composition of foreign-aid deliveries

	Unit	Aid from eastern countries							Red Cross aid		
		Total of offers	Actual deliveries						Actual deliveries		
			Nov. 1956	Dec. 1956	Jan. 1957	Febr. 1957	March 1957	Total	Up to 31 Dec. 1956	After 31 Dec. 1956	Total
Wheat and flour . . . . .	Thousand tons	57.0	26.4	21.8	6.7	—	—	54.9	2.5	0.7	3.2
Sugar . . . . .		6.0	5.7	0.9	0.1	—	—	6.7	..	..	0.54
Butter and fats . . . . .		2.0	1.9	—	—	—	—	1.9	..	..	1.12
Meat . . . . .		3.2	.. <sup>a</sup>	2.0 <sup>a</sup>	—	—	0.2	2.2	..	..	0.8 <sup>b</sup>
Salt . . . . .		15.2	10.3	3.0	—	0.3	—	13.6	..	..	0.01
Tinned milk . . . . .		..	0.64	0.22	—	—	—	0.86	0.6 <sup>cd</sup>	2.2 <sup>ce</sup>	2.8 <sup>cf</sup>
All food . . . . .		..	50.7	29.7	6.8	0.8	0.2	88.2	3.4	7.6	11.0
Coal . . . . .		34.5	21.8	12.1	—	0.5	—	34.4	1.3	5.9	7.2
Fuelwood . . . . .		63.6	3.0	21.9	7.7	0.3	—	32.9	..	..	..
Motor oil, gas oil, petroleum		13.0	4.1 <sup>g</sup>	3.1 <sup>g</sup>	0.5 <sup>g</sup>	—	—	7.7 <sup>g</sup>	..	..	..
Window glass . . . . .	Thousand m <sup>2</sup>	1 391	421	257	22	222 <sup>h</sup>	.. <sup>h</sup>	922	34 <sup>i</sup>	130 <sup>i</sup>	164 <sup>i</sup>
Building timber . . . . .	Thousand m <sup>3</sup>	75	5	17	3	27 <sup>h</sup>	.. <sup>h</sup>	52	..	..	..
Cement . . . . .	Thousand tons	54.0	9	10	6	5	9	39	..	..	..
Cloth . . . . .	Thousand metres	..	192	288	—	6 <sup>h</sup>	.. <sup>h</sup>	486	..	..	..
Outer wear . . . . .	Thousand sets	300	24	36	—	119 <sup>h</sup>	.. <sup>h</sup>	179	199	515	714
Shoes . . . . .	Thousand pairs	1 500	204	240	—	119 <sup>h</sup>	.. <sup>h</sup>	563	..	..	164 <sup>i</sup>
Medical supplies . . . . .	Thousand tons	..	..	..	..	..	..	..	.. <sup>j</sup>	..	0.183

Sources : Fontosabb adatok, op. cit., pp. 28, 72 (eastern countries in 1956) ; Népakarat, 6 February and 10 March 1957 ; information received from the Central Statistical Office (eastern countries in January-March 1957). Népszabadság, 5 January 1957 (Red Cross deliveries in 1956) ; Press release No. 5986, of 9 April 1957, of the International Red Cross (total Red Cross deliveries).

<sup>a</sup> November-December. <sup>b</sup> Tinned meat and fish. <sup>c</sup> Including powdered milk. <sup>d</sup> Further deliveries : 10 tons of coffee, 11 tons of cocoa, 58 tons of chocolate and 54,000 uniform gift parcels. <sup>e</sup> Further deliveries : 57 tons of chocolate and 398,000 gift parcels. <sup>f</sup> Further deliveries (total of previously listed items) : 10 tons of coffee, 11 tons of cocoa, 115 tons of chocolate and 452,000 uniform gift parcels. <sup>g</sup> Gas oil and petroleum. <sup>h</sup> February-March. <sup>i</sup> Tons. <sup>j</sup> Value : 2.4 million Swiss francs.

TABLE V  
Outward and inward movement of refugees

	Arrivals		Repatriation		Net outward (or inward) movement
	Austria	Yugoslavia	Austria	Yugoslavia	
November 1956 <sup>a</sup> . . . . .	115 851	426	..	..	116 277
December 1956 . . . . .	42 900	1 019	241	132	43 546
January 1957 . . . . .	13 861	13 698	2 003	91	25 465
February 1957 . . . . .	1 051	2 992	887	753	2 403
March 1957 . . . . .	292	435	1 185	811	(1 269) <sup>b</sup>
April 1957 . . . . .	194	319	146	391	(24) <sup>b</sup>
Total . . . . .	174 149	18 889	4 462	2 178	183 386 <sup>c</sup>

Sources : Information released by the Office of the United Nations High Commissioner for Refugees.

<sup>a</sup> Arrivals from 28 October onwards are included with the figures for November.

<sup>b</sup> Net inward movement.

<sup>c</sup> Net total allowing for 3,012 cases of repatriation from other countries than Austria and Yugoslavia.



## AN ESTIMATE OF THE NATIONAL ACCOUNTS OF THE SOVIET UNION FOR 1955

*The statistics shown in this note are presented entirely on the responsibility of the secretariat. Accounts of this nature are not as yet prepared officially in the Soviet Union but have been compiled by the secretariat predominantly from figures quoted in Soviet official publications. Some entries nevertheless are based on rough calculations by the secretariat, and the accounts as a whole are presented with reserve.*

The appearance during the past year of a number of statistical abstracts from the Central Statistical Administration of the U.S.S.R. has provided a considerable volume of factual information on the progress of the Soviet economy since the late 'thirties when the publication of such abstracts was suspended. Together with a summary volume covering most sectors of the Soviet economy, and the first of a series of abstracts for the republics (that for the Russian Federation), special handbooks have to date appeared on industry, education and retail trade. No data have yet appeared on the size of the national income except for index-numbers of its growth<sup>1</sup> and of its components in money terms. Only data on retail trade and the main elements of the public accounts have been systematically published. Many non-Soviet statisticians have sought to fill this gap, but no set of accounts so far published relates to a year later than 1948.<sup>2</sup>

The interest of the accounts shown in this note would in part be their topicality and in part their conformity with the patterns of presentation usual to many other countries. So far as possible the accounts conform to the standards set by the United Nations *System of National Accounts*.<sup>3</sup>

<sup>1</sup> Estimates for the share of the "accumulation" and "consumption" funds have also been quoted for certain years. A rough adaptation of the figures in the present accounts to the definitions used by Soviet statisticians of these "funds" (notably exclusion of services, the transfer of some military goods from consumption to accumulation and allowance for depreciation and retirements of capital) seem to give results satisfactorily close to the published proportions.

<sup>2</sup> For a description of these estimates, together with a discussion of the methodology used by Soviet statisticians, see M. C. Kaser, *Economic Journal*, March 1957.

<sup>3</sup> *A System of National Accounts and Supporting Tables*, United Nations, New York, 1953 (Studies in methods, Series F, No. 2), hereafter referred to as the *System*. The latest (tenth) issue of *Statistics of National Income and Expenditure*, United Nations, New York, 1957 (Statistical papers, Series H, No. 10), gives broadly comparable accounts for 64 countries and other national income indicators for 17 countries.

The flows entered in the accounts seek to describe the structure of the system in terms of transactions. Production is taken as the basic concept and subdivided according to its uses; the finance of the expenditure on these products is considered in juxtaposition and should properly be traced back to its ultimate source, either in domestic productive activity or in the rest of the world.<sup>4</sup>

In the present estimates production has been obtained by aggregating the value of final products, viz., retail sales, estimates of personal expenditures on services, purchases for final current use by the government, capital formation and a rough insertion for auto-consumption.<sup>5</sup> The *System* also provides for an imputation of rent for owner-occupied dwellings. No such figure was incorporated in the present set of accounts in a desire to adhere as closely as possible to the concepts of transactions as recorded by Soviet statisticians: although the Soviet national income concept excludes all but "productive services", remunerated services are computed for tabulation of the "re-distribution" of national product. Imputed rent is clearly not one of these.<sup>6</sup>

The producing sectors have been defined somewhat differently from those in the *System of National Accounts*. General government is considered a "producer" and "user" of current governmental services (administration, global economic organization, justice, defence, public safety, etc.). In accordance

<sup>4</sup> *Ibid.*, p. 4.

<sup>5</sup> Following the definitions of the *System of National Accounts*, an estimate was made of auto-consumption by farm households and others engaged in primary production, even where the main trade of the head of the household was in a non-primary sector (e.g., the vegetable garden of a miner). In accordance with the *System*, non-primary production performed by producers outside their trade was not considered.

<sup>6</sup> To provide, however, a basis of comparison with standard accounts of other countries, a rough calculation shows the imputed rent of owner-occupied dwellings and government offices as less than 20 billion roubles.

with the usual generalization of that concept, government services were held to cover educational, public health and research institutions where these were financed through the state budget.<sup>7</sup> Some similar services were provided by enterprises (e.g., research stations financed by industry) but the salaries paid therein were not available.<sup>8</sup> General government was not, however, held to perform any fixed investment although on a proper definition of the government sector those capital works which remain the property of the central or local government (e.g., roads, bridges, etc.) should be shown as accruing within that sector. Here the difficulty of conforming to the definition was the impossibility of separating the capital outlays of the government and the state-owned enterprises. This was not simply because no distribution was available of those capital works finally held by government (i.e., by organizations dependent on the budget for their finance) and by enterprises (i.e., those with autonomous financial accounts) but because the line of final ownership is drawn quite differently in the Soviet Union from the way in which it is drawn in many other countries. Thus, on the one hand, investment in a radio station would appear as government investment (but in other countries as private enterprise or public corporation) whereas municipal house-building would appear as an enterprise account (but in other countries as part of government outlay).

The abandonment of the distinction between private enterprises and public corporations was of small significance in a country where private non-farm production was so minute as to fail to reach 0.05 per cent of industrial output.<sup>9</sup>

Co-operative enterprises were taken with state enterprises to form an enterprise sector, which, in practice, coincides with the private and public enterprise sector of the *System of National Accounts*. No detailed breakdown of gross domestic product by industrial origin could be obtained but farming—the one clearly separable sector—was isolated from non-farm enterprise. This farm sector, moreover, was divided between state and co-operative farms and

farm households (i.e., the few independent peasants or rural craftsmen,<sup>10</sup> collective farmers tilling their private holdings and workers—including state farm workers—running small private plots). In distributing state enterprises associated with farming, the convention was adopted of placing in the farm sector only those enterprises actually owning the produce raised. Thus, State and collective farms and the multitude of subsidiary agricultural establishments run by factories, etc. were put in the farm sector. But those which, while contributing to agricultural output, are paid by the farms and have no direct title to the produce at the moment of cropping, were allocated to the non-farm sector (e.g., M.T.S. working the soil, or procurement agencies collecting and transporting seeds and crops.) This convention also facilitated the allocation of tax payments (notably turnover tax paid by procurement agencies). By virtue of the separation of farming from the enterprise sector, the accounts of the farm households sector reflect both production and consumption activities. The non-farm household sector is, however, strictly defined as incapable of production.

The one difference in account presentation between the *System of National Accounts* and that given here is the division of the appropriation account into an "income" and an "income-use" account. The advantage of this breakdown is the isolation of a value for gross disposable income which seems to accord (except for the inclusion of auto-consumption) with the account prepared (though not published) by the State Planning Commission of the U.S.S.R., and entitled "the balance of incomes of the population". The choice of an account gross of depreciation was dictated by the absence of data on capital stock or on full depreciation allowances.

In interpreting the magnitudes of the entries in Table 1, three considerations must be borne in mind. The first is that the gross product shown does not conform to the usual categories of "domestic" or "national" product since the account with the rest of the world is ignored. The foreign trade turnover of the Soviet Union in 1955 has been published (25 billion roubles) but no indication of the balance of payments has been made; moreover, the valuation of foreign trade turnover (at world market prices converted from dollars to roubles at the official exchange) substantially under-estimates the value at which the traded goods enter the domestic accounts.

<sup>7</sup> This does not exclude some purchase of these services by households (e.g., museum-entries and—though since 1956 in the Soviet Union this is no longer the case—school and university fees), nor finance of research units by enterprises where the money is channelled through the public accounts.

<sup>8</sup> The error introduced by this omission cannot be large since all research cost 11.6 billion roubles, of which the bulk was financed through the budget.

<sup>9</sup> *Narodnoe Khozyaistvo S.S.S.R.*, 1956, p. 31, gives 100.0 per cent of industrial output as produced by State and co-operative enterprises in 1955. Production of private services (e.g., medical aid rendered outside the public health service directly to persons, but not that through collective farm clinics) is excluded and this would in a small degree understate final product.

<sup>10</sup> Private peasants and artisans outside co-operatives were in 1955 0.4 per cent of the gainfully occupied civilian labour force (*ibid.*, p. 188). The production of such artisans was included for convenience in the rough estimation of farm household output since most were believed to work for the rural population (blacksmiths, etc.).

TABLE 1

Secretariat estimates of the national accounts of the Soviet Union, 1955, without reference to the foreign balance

*Billions of roubles*

Account \ Sector		General government		Non-farm enterprises		State and collective farms		Farm households		Non-farm households		Total economy (net)	
		Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts	Expenditure	Receipts
<b>I. Production account</b>													
Production for consumption (including auto-consumption) by:													
Government . . . . .		1	— 251	—	—	—	—	—	—	—	—	—	251
Farm households . . . . .		2	— —	—	89	—	20	—	50	—	—	—	159
Non-farm households . . . . .		3	— —	—	418	—	16	—	38	—	—	—	472
Production for gross fixed investment in:													
Government . . . . .		4	— —	—	a	—	—	—	—	—	—	—	—
Non-farm enterprises . . . . .		5	— —	—	161	—	—	—	—	—	—	—	161
State and collective farms . . . . .		6	— —	—	21	—	4	—	—	—	—	—	25
Farm households . . . . .		7	— —	—	10	—	—	—	5	—	—	—	15
Non-farm households . . . . .		8	— —	—	4	—	—	—	—	—	—	—	4
Production for increase in stocks . . . . .		9	— —	—	13	—	—	—	—	—	—	—	13
Products for productive use bought from (sold to) other sectors . . . . .		10	131 —	87 158		27 102		20 5		— —		— —	
Balance = Gross product . . . . .			120 —	787 —		115 —		78 —		— —		1 100 —	
Total . . .			251 251	874 874		142 142		98 98		— —		— —	
<b>II. Income account</b>													
Gross product . . . . .			— 120	— 787		— 115		— 78		— —		— 1 100	
Wages, salaries, premia and farm dividends in money . . . . .		11	120 —	369 —		54 —		— 54		— 489		— —	
Wages and farm dividends in kind . . . . .		12	— —	5 —		40 —		— 40		— 5		— —	
Stipends and scholarships . . . . .		13	7 —	— —		— —		— —		— 7		— —	
Social transfer premia and payments . . . . .		14	53 20	20 —		— —		— 7		— 46		— —	
Insurance premia . . . . .		15	— 2	— —		2 —		— —		— —		— —	
Taxes and profit deductions . . . . .		16	— 488	428 —		8 —		5 —		47 —		— —	
Personal purchase and repayments of state bonds . . . . .		17	12 31	— —		— —		3 3		28 9		— —	
Subsidies and compensation for losses . . . . .		18	77 —	— 74		— 3		— —		— —		— —	
Balance = gross disposable income . . . . .			392 —	39 —		14 —		174 —		481 —		1 100 —	
Total . . .			661 661	861 861		118 118		182 182		556 556		— —	
<b>III. Income use account</b>													
Gross disposable income . . . . .			— 392	— 39		— 14		— 174		— 481		— 1 100	
Consumption . . . . .		19	251 —	— —		— —		159 —		472 —		882 —	
Balance = gross saving . . . . .			141 —	39 —		14 —		15 —		9 —		218 —	
Total . . .			392 392	39 39		14 14		174 174		481 481		— —	
<b>IV. Capital reconciliation account</b>													
Gross saving . . . . .			— 141	— 39		— 14		— 15		— 9		— 218	
Capital grants . . . . .		20	123 —	— 117		— 6		— —		— —		— —	
New loans and deposits, net . . . . .		21	7 —	— 7		— 5		— —		7 2		— —	
Real investment, gross . . . . .		22	a —	174 —		25 —		15 —		4 —		218 —	
Unexplained <sup>b</sup> . . . . .		23	11 —	— 11		— —		— —		— —		— —	
Total . . .			141 141	174 174		25 25		15 15		11 11		— —	

Sources: See Appendix on Sources and Methods.

<sup>a</sup> Government investment is merged with that of non-farm enterprises.

<sup>b</sup> This does not represent the statistical discrepancies within the accounts since each account has been balanced up.

NOTE. — The reliability indicator reflects the source of the figure as follows:

- 1 Figures directly taken from a Soviet official source.
- 2 Estimated subdivision of a figure taken from a Soviet official source.
- 3 Secretariat estimate based upon some indication of magnitude in a Soviet source.
- 4 Secretariat estimate based upon evidence less well founded than in 3.
- 5 Residual entry shown by an imbalance between receipts and expenditure or based upon very rough estimates.

Row and column number	Component	Value (Billion roubles)	Reliability indicator
<b>General government sector</b>			
1 B	a. Purchase of goods on current account	131	4
	b. Salaries of government employees . . .	120	3
10 A	Identical with 1 B a		
11 A	Identical with 1 B b		
13 A	Stipends and scholarships . . . . .	7	3
14 A	a. Social security payments . . . . .	40	2
	b. Military pensions . . . . .	13	4
14 B	Social insurance premia . . . . .	20	2
15 B	Farm insurance premia . . . . .	2	1
16 B	a. Turnover tax . . . . .	242	1
	b. Deductions from profits of state enterprises . . . . .	103	1
	c. Forest fees paid by state enterprises . . .	1	2
	d. Taxes on non-merchandising operations .	4	3
	e. Entertainments tax . . . . .	4	3
	f. Income taxes on industrial co-operatives .	3	3
	g. Income taxes on retail co-operatives . .	2	1
	h. Other taxes (including customs duties) paid by state enterprises . . . . .	69	3
	i. Income taxes on collective farms . . . .	7	3
	j. Forest fees paid by collective farms . . .	1	2
	k. Taxes on private agricultural incomes . .	4	3
	l. Other taxes (including horse tax) paid by private farmers and collective farm members . . . . .	1	3
	m. Direct taxes . . . . .	43	1
	n. Other revenue (including school fees, museum admissions, etc.) from persons . .	4	1
17 A	Service and redemption of State Loan . .	12	1
17 B	Mass subscription to State Loan . . . .	31	1
18 A	a. Subsidies to non-farm enterprises . . .	43	4
	b. Subsidy to machine-tractor stations . .	15	3
	c. Compensation for losses on state agricultural procurement . . . . .	16	3
	d. Subsidy to state farms . . . . .	3	3
19 A	Identical with 1 B		
20 A	a. Capital grants to state non-farm enterprises . . . . .	117	2
	b. Capital grants to state farms . . . . .	6	2
21 A	New loans and deposits . . . . .	7	3
23 A	Unexplained . . . . .	11	5
<b>Non-farm enterprise sector</b>			
2 D	Money receipts of farm households:		
	a. Wages of state farm workers . . . . .	17	3
	b. Wages of labour hired by collective farms . . . . .	5	3
	c. Cash dividends of collective farm members . . . . .	30	3
	d. Dividends of members of fishing co-operatives . . . . .	2	3
	e. Sales by households on collective farm markets . . . . .	37	2
	f. Sales by households on commission arrangements in retail co-operatives . .	1	2
	g. Receipts from state procurements . . .	5	3
<b>Non-farm enterprise sector (contd.)</b>			
	h. Social security and military pensions paid to farm households . . . . .	7	2
	Less money outlays other than for consumption.		
	i. Taxes on private agricultural incomes . .	-4	3
	j. Other taxes (including horse tax) paid by private farmers and collective farm members . . . . .	-1	3
	k. Purchases of farm households for productive investment . . . . .	-5	5
	l. Housing investment by farm households .	-5	4
3 D	Total household expenditure for consumption:		
	a. Retail purchases . . . . .	447	2
	b. Outlay on entertainment . . . . .	8	3
	c. Rent . . . . .	8	3
	d. Urban transport fares . . . . .	4	4
	e. Other passenger fares . . . . .	16	4
	f. Post and telecommunication charges . .	3	4
	g. Subscriptions to societies . . . . .	4	4
	h. Other outlays on services . . . . .	12	4
	Plus income in kind . . . . .		
	i. Income in kind of workers . . . . .	5	5
	Less		
	j. Cash purchases for consumption by farm households (item 2 D) . . . . .	-89	3
5 D	a. Own fixed investment of state enterprises . . . . .	152	1
	b. Investment by industrial co-operatives .	4	2
	c. Investment by retail co-operatives . . .	5	2
6 D	a. Investment by state farms . . . . .	6	2
	b. Investment by collective farms . . . . .	15	2
7 D	a. Investment by farm holdings in productive capital (item 2 D k) . . . . .	5	5
	b. Investment in farm housing (item 2 D l) .	5	4
8 D	Investment in housing by non-farm households . . . . .	4	4
9 D	Increase in stocks (working capital) . . .	13	3
10 C	a. Purchases from state farms . . . . .	20	4
	b. Purchases from collective farms . . . .	55	1
	c. Purchases from subsidiary enterprises of collective farms . . . . .	5	2
	d. Purchases from fishing co-operatives . .	2	3
	e. Purchases from farm households . . . .	5	3
10 D	a. Sales to government on current account (identical with 1 B a) . . . . .	131	4
	b. Sales to state farms . . . . .	6	4
	c. Sales to collective farms . . . . .	12	2
	d. M.T.S. receipts . . . . .	9	3
11 C	a. Wages and salaries of non-farm workers and employees "in the national economy" . . . . .	302	3
	b. Wages of M.T.S. staff . . . . .	18	4
	c. Premia from enterprise funds . . . . .	2	3
	d. Other wages and personal income from non-farm enterprises . . . . .	34	5
	e. Earnings of members of industrial co-operatives . . . . .	13	4

TABLE 2

Composition of each item in Table 1  
(Secretariat estimates of the national accounts of the Soviet Union, 1955) (continued)

Row and column number	Component	Value (Billion roubles)	Reliability indicator	Row and column number	Component	Value (Billion roubles)	Reliability indicator
<b>Non-farm enterprise sector (contd.)</b>				<b>State and collective farm sector (contd.)</b>			
12 C	Income in kind of non-farm workers . . .	5	5	22 E	Identical with the sum of items 6 D and 6 F		
14 C	Identical with item 14 B			<b>Farm household sector</b>			
16 C	Identical with items 16 B a to 16 B h			2 H	a. Auto-consumption by farm households proper . . . . .	40	5
18 D	Identical with items 18 A a to 18 A c				b. Auto-consumption by other primary producers . . . . .	10	5
20 D	Identical with item 20 A a			3 H	Identical with items 2 D e and 2 D f		
21 D	a. Loans from banks to state enterprises	5	5	7 H	Self-generated investment of farm households . . . . .	5	4
	b. Loans from banks to industrial co-operatives . . . . .	1	4	10 G	Identical with item 10 F b		
	c. Loans from banks to retail co-operatives	1	4	10 H	Identical with item 10 C e		
22 C	Identical with the sum of items 5 D and 9 D			11 H	Identical with items 2 D a to 2 D d		
23 D	Identical with 23 A			12 H	Identical with the sum of items 2 F and 10 F b		
<b>State and collective farm sector</b>				14 H	Identical with item 2 D h		
2 F	Dividend in kind used by farm members for consumption . . . . .	20	5	16 G	Identical with items 16 B k and 16 B l		
3 F	a. Sales on farm markets by collective farms . . . . .	12	2	17 G	Purchase of state bonds by farm households . . . . .	3	2
	b. Sales on commission in co-operative shops for collective farms . . . . .	4	2	17 H	Service and redemption of state bonds due to farm households . . . . .	3	2
6 F	Self-generated investment of collective farms . . . . .	4	2	19 G	Identical with sum of items 2 D, 2 F and 2 H		
10 E	Identical with 10 D b to 10 D d			22 G	Identical with the sum of items 7 D and 7 H		
10 F	a. Sales to state and co-operative non-farm enterprises (identical with items 10 C a to 10 C d) . . . . .	82	4	<b>Non-farm household sector</b>			
	b. Dividend in kind used by farm members for sale or production on private plots	20	5	All items correspond to opposing entries in the same row, except for:			
11 E	Identical with items 2 D a to 2 D d			19 J	Identical with sum of 3 D, 3 F and 3 H		
12 E	Identical with the sum of items 2 F and 10 F b			21 J	Net deposits by persons in the savings banks . . . . .	7	1
15 E	Identical with item 15 B			21 K	Net mortgage loans to persons . . . . .	2	3
16 E	Identical with items 16 B i and 16 B j			22 J	Identical with item 8 D		
18 F	Identical with item 18 A d						
20 F	Identical with item 20 A b						
21 F	Loans by banks to collective farms . . .	5	3				

The omission of a foreign balance, unless it were by chance zero in 1955, renders the exact balance of the internal flows somewhat spurious but there is no evidence that this is a major source of distortion: in any case, the error is narrowed to the value of net foreign lending.

The second *caveat* is that coverage of the accounts may not perhaps be as full as that usual for other industrially developed countries. This does not necessarily arise from a failure by the Soviet authorities to record certain transactions<sup>11</sup> but from the necessity of computing products from data not

systematically brought together by the statistical authorities for this purpose. The exclusion of small private goods output and of various private services as well as of possible other production by socialized enterprises is recognized and the balance of personal outlays and incomes in the account is not a proof that no error exists. This balance was created by the inclusion of an additional amount of personal income beyond recorded remuneration.<sup>12</sup> The fact that the error is not on the side of personal outlays suggests that the omission of non-recorded product was unimportant.

<sup>11</sup> Although S. Partigul, *Voprosy Ekonomiki*, No. 10, 1956, pp. 56-58, sees a source of error in the Soviet (unpublished) data.

<sup>12</sup> This discrepancy amounted to 4 per cent of gross disposable income but part of it was known to have accrued to workers outside the registration "national economy".

The third note of caution relates to the manner of computing the components of these accounts. The secretariat made every effort to derive the statistics from Soviet official publications and quote these in full in the appendix "Sources and Methods". For ease of reference an indicator of the reliability of each figure in relation to an official Soviet source has been set against each entry in the table of components (Table 2). The fact that very few of the figures could be taken directly from official sources and that the vast majority had to be estimated—albeit from indications in Soviet publications—implies a margin of error which may be considerable in some cases. In particular, any error in the extremely rough figure inserted for auto-consumption, a large entry, would seriously affect the over-all magnitude of product.

Even if the reliability of the figures were much greater than it is, and if the concepts were precisely aligned with those of the standard accounts, comparability of the various flows with those of other countries would be seriously affected by the characteristics of the Soviet price system. Soviet fiscal practice, like those of eastern Europe, lays much greater emphasis than, say, a typical western European budget, on indirect taxation (notably on a substantial turnover tax, receipts of which represent more than one-fifth of the gross domestic product). As a consequence consumer goods, upon which the tax is almost exclusively levied, enter the accounts at a higher valuation (and conversely capital goods at a lower valuation) than if those same goods were priced in a western European country. In western European usage valuation in factor cost has been introduced to eliminate—albeit with conceptual inadequacies—the incidence of such imposts, but Soviet economists rightly argue that in a socialist State the division between the profit of a state enterprise and an indirect tax is without economic significance—i.e., it is an arbitrary division made for the convenience of the authorities. No attempt has been made in the present note to separate that part of net indirect tax

paid by state enterprises which is properly factor income, and that part which is truly tax—e.g., along the lines of the "adjusted factor cost" as formulated by Professor Bergson.<sup>13</sup> It is clear from recent Soviet writings, notably those of Academician Strumilin,<sup>14</sup> that the problem is one currently exercising Soviet economists.

A further price problem, vitiating inter-sector comparison of production and consumption, is that of the valuation of farm produce. In value (not volume) terms, some 45 per cent of the marketed products of Soviet farms is compulsorily delivered to the State at a low procurement price; some 15 per cent is sold to the State at a higher purchase price (though somewhat below the price at which the goods are resold at retail); and 40 per cent is sold directly to households at prices usually greatly exceeding the State retail price. A twofold problem arises: the first is the comparability of the original product of the farm and other sectors, and the second the valuation of auto-consumption. Neither of these problems is alien to the compilation of accounts for other countries; in the Soviet case the difficulties are intensified by the absence of published quantitative data on agricultural output or on the actual relationship between the price-groups. For the accounts in this note all sales are intended to be at the actual prices received by the farm and auto-consumption is valued—as is understood to be Soviet practice—at the average (weighted by sales) of these realized prices. It is clear that, given the wide differentials existing in 1955 (but subsequently reduced) any different pricing convention—other than over-all valuation in procurement prices—would substantially raise the share of the farm sectors in gross product.

<sup>13</sup> A. Bergson, *Soviet National Income and Product in 1937*, New York, 1953.

<sup>14</sup> S. Strumilin, *Voprosy Ekonomiki*, No. 12, 1956, and *Planovoe Khozyaistvo*, No. 2, 1957. Articles in *Promyshlenno-Ekonomicheskaya Gazeta* (23 December 1956, 10 February and 10 March 1957) by Turetsky and Kronrod are also to be noted.

# SOURCES AND METHODS

## General government sector

The derivation of all items from the Soviet public accounts (published in the annual budget reports of Mr. Zverev, Minister of Finance) is shown in Table A.

TABLE A  
Derivation of items in government account from state budget statistics

	Account item as here presented	Budget	Included in item No.
<b>EXPENDITURE</b>			
	Billion roubles		
Expenditure on current goods . . . . .	14		1 B a
Expenditure on current goods for M.T.S. . . . .	6 <sup>a</sup>		18 A b
M.T.S. wages . . . . .	18 <sup>a</sup>		18 A b
Other salaries on "national economy" vote . . . . .	8		1 B b
Investment . . . . .	117 <sup>b</sup>		20 A
Increase in circulating capital . . . . .	6 <sup>b</sup>		20 A
Subsidies to state non-farm enterprises . . . . .	43		18 A a
Subsidies to state farms . . . . .	3		18 A d
Social insurance premia for staff . . . . .	2 <sup>c</sup>		..
Procurement subsidies . . . . .	16		18 A c
<i>Total, national economy</i> . . . . .	233	233	
Expenditure on services for social-cultural measures . . . . .	61		1 B b
Social insurance premia for staff . . . . .	4 <sup>c</sup>		..
Expenditure on goods for education and health . . . . .	22		1 B a
Subsistence expenditure in health institutions . . . . .	6		1 B a
Expenditure on goods in social insurance institutions . . . . .	7		1 B a
Stipends . . . . .	7		13 A
Transfer to persons as social security . . . . .	40		14 A a
<i>Total, social-cultural measures</i> . . . . .	147	147	
Military subsistence . . . . .	12		1 B a
Military pay . . . . .	18		1 B b
Civilian services . . . . .	4		1 B b
War and military pensions . . . . .	13		14 A b
Expenditure on military goods . . . . .	58		1 B a
Social insurance premia . . . . .	— <sup>c</sup>		..
<i>Total, defence</i> . . . . .	105	105	
<i>Loan service</i> . . . . .	12	12	17 A
Expenditure on goods for administrative organs . . . . .	7		1 B a
Social insurance premia for civil servants . . . . .	1 <sup>c</sup>		..
Expenditure on services of civil servants under "administration" vote . . . . .	5		1 B b
<i>Total, administration</i> . . . . .	13	13	
Ministry of Internal Affairs, local authorities and other expenditure on services . . . . .	24		1 B b
Reserve Fund of Council of Ministers . . . . .	—		..
Expenditure of local authorities on goods . . . . .	5		1 B a
<i>Total, other expenditure</i> . . . . .	29	29	
<b>TOTAL EXPENDITURE</b> . . . . .		539	

TABLE A (contd.)

Derivation of items in government account from state budget statistics

	Account item as here presented	Budget	Included in item No.
	Billion roubles		
New bank loans . . . . .	7		21 A
Remainder of budget surplus . . . . .	18 <sup>b</sup>		20 A
Total, budget surplus . . . . .	25	25	
Total revenue . . . . .		564	
REVENUE FROM SOCIALIZED SECTOR			
Turnover tax . . . . .	242	242	16 B a
Deductions from profits . . . . .	103	103	16 B b
Social insurance premia for government staff . . . . .	7 <sup>c</sup>		..
Social insurance premia for state enterprise staff . . . . .	20		14 B
Total, social insurance premia . . . . .	27	27	
Collective farm insurance premia . . . . .	2	2	15 B
Forest fees from state enterprises . . . . .	1		16 B c
Forest fees from collective farms . . . . .	1		16 B j
Total, forest fees . . . . .	2	2	
Tax on non-merchandising operations . . . . .	4		16 B d
Entertainments tax . . . . .	4		16 B e
Taxes on industrial co-operatives . . . . .	3		16 B f
Taxes on retail co-operatives . . . . .	2		16 B g
Receipts of M.T.S. . . . .	9 <sup>a</sup>		18 A b
Taxes on collective farms . . . . .	7		16 B i
Other taxes on State enterprises . . . . .	69		16 B h
Total, non-specified taxes . . . . .	98	98	
Total revenue from socialized sector . . . . .		474	
REVENUE FROM INDIVIDUALS			
State Loan . . . . .	31	31	17 B
Increase in savings bank deposits . . . . .	7 <sup>b</sup>	7	20 A
Taxes on private agricultural incomes . . . . .	4		16 B k
Other taxes paid by private farmers . . . . .	1		16 B l
Direct taxes on other personal incomes . . . . .	43		16 B m
Total, direct taxes . . . . .	48	48	
Other revenue from persons . . . . .	4	4	16 B n
Total, revenue from persons . . . . .		90	

Sources: 1955 and 1956 Budget reports in *Zasedania Verkhovnogo Soveta S.S.S.R.* and *Planovoe Khozyaistvo*, No. 1, 1956.

<sup>a</sup> In the account, the aggregate of M.T.S. current outlays was offset by receipts of M.T.S. and appeared as a subsidy to M.T.S.

<sup>b</sup> The sum of the expenditure items was diminished in the accounts by net borrowing from the public and item 23 A.

<sup>c</sup> Self-balancing item excluded from account; social security premia paid in respect of "defence" staffs was included with those carried under "administration".

- 1 B a. Government purchases of goods for current use were obtained as the residual after deducting other types of expenditure under each budgetary heading, all of which, with the exception of subsidies, could be determined with a reasonable degree of accuracy. Purchase of goods as military subsistence was roughly estimated at 3,000 roubles per man per year. The total average strength of the armed forces during 1955 was taken for the purposes of the present accounts as 4 million men; their subsistence consequently totalled 12 billion roubles. Subsistence in hospitals, crèches, etc. (food only) was based upon numbers of hospital, crèche, nursery, sanatorium and rest-home beds (*Narodnoe Khozyaistvo S.S.S.R., passim*) upon the assumption that bed capacity was 80 per cent occupied, except for sanatoria and rest-homes, which,

in view of their seasonal use, were assumed as 70 per cent occupied. The number of occupied beds was multiplied by an estimate of food consumption varying with the nature of the occupant (child, invalid or holidaymaker). Occupants of hospitals were estimated to consume 2 billion roubles of food, of crèches 2 billion roubles, of temporary day-nurseries, 1 billion roubles, and of sanatoria and rest-houses 1 billion roubles—viz., 6 billion roubles in all.

- 1 B b. The average salary of a civil servant was assumed to equal the average wage of all hired workers ("workers and employees in the national economy") with the exception of M.T.S. workers. The distribution of government employment (data for which are given in *Narodnoe Khozyaistvo S.S.S.R.*, p. 190) by budgetary appropriation is given in Appendix Table B, and the salaries computed therefrom in Table A.

TABLE B  
Appropriations from which government employees were assumed to be paid  
Millions of employees

Paid from "National economy" appropriation, comprising that part of the 1,361,000 not carried under "administration", an estimated 300,000 in geological survey, municipal housing administrations, planning offices etc. (listed among the 3,560,000 "Other" in the over-all national employment list) but excluding M.T.S. workers . . . . .	1.0
Paid from "Social-cultural measures" appropriation—viz., those listed under "education" and "health" services . . . . .	7.2
Paid from "Administration" appropriation—viz., in strictly administrative ministries such as the Ministry of Justice—and not paid under other heads . . . . .	0.6
Paid from "Defence" appropriation, comprising the civilian staff of the Ministry of Defence and labour hired by the armed forces . . . . .	0.5
	9.3

The wage-bill for 9.3 million employees outside M.T.S. service shown in Table B was assumed to be the national average: the 1954 average wage in all employment was 8,351 roubles. This wage was based on a 1954 index 1940 = 100 in *Politicheskaya ekonomia*, 1955, p. 483 (applied to the 1940 wage quoted in *Pravda*, 19 February 1941), and the 1955 increase was estimated at 2 per cent—viz., to 8,520 roubles. The order of magnitude of this increase was shown as probable by a 1956 increase of 3 per cent according to *Izvestia*, 31 January 1957, and of a 1955 increase including value of increments in transfer incomes of 3 per cent (*Izvestia*, 31 January 1956).

M.T.S. wages were understood to be considerably lower than the average by virtue of their seasonal nature, and were assumed to be three-quarters of the current expenditure of M.T.S. (the 24 billion roubles shown in Table C) following break-downs of M.T.S. costs quoted in *Sotsialisticheskoe Selskoe Khozyaistvo*, No. 11, 1954) and allowing for increase in wage-share consequent upon the introduction of payment of a guaranteed minimum by the State (subsequently by the collective farm) to tractor drivers.

TABLE C  
State expenditure on agriculture in 1955  
Billions of roubles

	Investment	Current	Total
Ministry of State Farms . . . . .	6.1 <sup>a</sup>	3.1 <sup>b</sup>	9.2 <sup>a</sup>
M.T.S. . . . .	7.9 <sup>b</sup>	24.2 <sup>b</sup>	32.1 <sup>a</sup>
Procurement agencies . . . . .	2.6 <sup>c</sup>	} 1.8 <sup>b</sup>	6.8 <sup>b</sup>
Other state farms and agricultural works . . . . .	2.4 <sup>d</sup>		
	19.0 <sup>e</sup>	29.1	48.1 <sup>f</sup>

<sup>a</sup> The planned figure given in *Planovoe Khozyaistvo* No. 2, 1955, p. 36, was deflated to allow for construction plan under-fulfilment (*ibid.*, No. 1, 1955, pp. 19 and 20, viz., by 8 per cent for state farms and 16.2 per cent for M.T.S.)

<sup>b</sup> By difference.

<sup>c</sup> In *Finansy S.S.S.R.*, No. 5, 1955, p. 17. (The Plan figure was assumed to have been fulfilled.)

<sup>d</sup> Estimate.

<sup>e</sup> Investment in 1954 and 1955 was 34.4 billion roubles, *Pravda*, 23 February 1956, cf. Survey for 1955, Table 128.

<sup>f</sup> Given in *Planovoe Khozyaistvo*, No. 1, 1956, p. 18.

Expenditure on services by the Ministry of Internal Affairs was roughly estimated from the shares of this Ministry in pre-war budgets, reduced to allow for the considerable reduction in its forces since 1953. The security forces count as military servicemen (although not paid from the defence appropriation) and therefore do not enter into Appendix Table B. Some salaries of municipal employees were also carried under the "Other expenditure" appropriation.

The computation of military pay used very tentative estimates of 17,500 roubles for an officer, 4,000 roubles for a non-commissioned officer in regular service and 2,500 roubles for each other rank. For the purposes of those accounts the average strength of the armed forces (excluding security forces) in 1955 was put at 500,000 officers, 500,000 regular N.C.O.s and 3 million other ranks—viz., an aggregate pay of 18 billion roubles.

Expenditure on munitions, equipment and defence works was obtained as the residual of the estimated defence expenditure of the year, 105 billion roubles (the 1955 budget showed 112 billion roubles, the 1956 budget showed 102.5 billion and 1956 actual was 98.8 billion) after deduction of pay, subsistence and pensions. It was assumed that the defence vote covered civilian labour employed by the Army (estimated at half a million persons and earning the average wage of 8,500 roubles), accounting for 4 billion roubles.

- 13 A. Stipends and scholarships for students were computed from the amount paid in 1953 (5.8 billion roubles) multiplied by the increase in student numbers between 1953 and 1955 (from the annual Plan results)—viz., 19 per cent.
- 14 A a. Social security payments were specified in the budget as social insurance, social security and family allowance outlays. Forty per cent of the insurance payments were assumed to be used for the maintenance and administration of institutions for the aged, etc. (cf. *Sovetskoe Gosudarstvo i Pravo*, No. 6, 1951, pp. 62 ff.)
- 14 A b. Pensions to retired regulars or conscripts disabled by war service were paid from the defence appropriation (cf. Kotlyar and Kozhevnikov, *Voprosy pensionnogo obespechenia voennosluzhashchikh i ikh semstv*, 1955, *passim*). They were assumed to be in line with contemporary social insurance pensions—viz., approximately 2,500 roubles. On a rough guess at war disablement and retirements of regulars, the number of pensions paid was estimated at 5 million, or 12.5 billion roubles.
- 14 B. Social insurance premia were given in the budget report as 27 billion roubles. Those paid by government departments for their staff (which consequently cancel out in the present form of accounts) were deducted on the basis of relative wage-bills (only wage-earners being included in the social insurance scheme).
- 15 B. Commercial insurance premia (almost wholly paid by collective farms, the remainder being life assurance) were 2 billion roubles in the 1956 budget.
- 16 B a. Turnover tax receipts were specified in the budget report.
- 16 B b. Deductions from profits were specified in the budget report and include retro-transfers of excess working capital to the budget.
- 16 B c. Forest fees paid by the state enterprises were estimated at half the revenue from this source (1.87 billion roubles according to *Finansy S.S.S.R.* No. 6, 1955, p. 28), the other half appearing as item 16 B j.
- 16 B d. Receipts from the tax on non-merchandising operations and income tax receipts from co-operatives were 6.7 billion roubles in 1956 (from the 1957 Budget speech); taxes on co-operatives were estimated for 1955 at 4.6 billion roubles (see items 16 B f-g), but since producer co-operatives employing one-third of membership were nationalized in 1956, and since those nationalized were the more profitable ones, the 1956 receipts of these taxes were likely to have been about 2.8 billion roubles, implying about 4 billion roubles as the tax on non-merchandising operations in 1956. Since no changes in tax-rates were known for 1956 and since the volume of operations could have changed little between 1955 and 1956, the same figure was used for 1955.
- 16 B e. Entertainments tax was derived as the product of receipts from each branch of entertainment and the appropriate rate of tax as shown in Appendix Table D.

TABLE D  
Entertainments tax

	Attendance (Millions)	Average price of seat (Roubles)	Est. receipts (Billion roubles)	Tax rate (per cent)	Tax (Billion roubles)
Urban cinemas . . . . .	1 631	3.50	5.71	55	3.14
Rural cinemas . . . . .	874	2	1.75	40	0.70
Theatres . . . . .	78	10	0.78	10	0.08
Circuses . . . . .	28	7	0.20	10	0.02
Museums . . . . .	36	1	0.04	5	—
Other (dances, races, etc.) . . . .	..	..	(0.06)	10	0.01
Total . . . . .	..	..	8.5	..	3.95

Sources: 1955 attendances were taken from *Kulturnoe Stroitelstvo S.S.S.R.*, 1956, multiplied by estimated average price of seat, and rates of tax taken from A. K. Suchkov, *Gosudarstvennye Dokhody S.S.S.R.*, 1949, p. 128.

- 16 B f. Taxes on all forms of co-operatives and collectives were 9.3 billion roubles in 1952. The tax on industrial and trade co-operatives was here estimated at 5 billion roubles and on collective farms (item 16 B i) at 7 billion. The rate of tax on co-operative industry was 45 per cent in 1952 and 1953 (*Finansy S.S.S.R.*, No. 9, 1954, p. 45)—viz., 2.7 billion roubles on an estimated profit of 6 billion roubles (profits were 5.9 billion roubles in 1954. Cf. *Finansy S.S.S.R.*, No. 2, 1955).
- 16 B g. The rate of tax on profits of consumer co-operatives was 35 per cent (M. A. Gurvich, *Sovetskoe Finansovoe Pravo*, 1952, p. 192), and their profits in 1955 were 5,424 million roubles (*Sovetskaya Torgovlya*, 1956, p. 126): the tax thereon would have been 1.9 billion roubles, leaving 3.5 billion as retained profits.
- 16 B h. Other taxes from state enterprises were obtained as the residual of revenue derived from the provisional total of revenue from the socialist sector (given in the budget report) less revenue otherwise specified. The final figures for total revenue, quoted in the budget report the following year, showed 2 billion roubles more than the provisional total revenue: the revision of 2 billion roubles was assumed to have been derived wholly from revisions to socialist sector revenue and added to this item.
- 16 B i. The rates of tax valid for the income of collective farms were 6 per cent on the value of goods used within the farm, 12 per cent on goods sold to other farms, 9 per cent on goods sold to the State and 15 per cent on goods sold on farm markets (Gurvich, op. cit., p. 194). Collective farms' 1955 sales on farm markets and commission sales were 16 billion roubles (see items 3 F a and 3 F b), on which 2.4 billion roubles tax would have been paid, their income from sales to the State was 55 billion roubles (*Narodnoe Khozyaistvo S.S.S.R.*, p. 128, and *Dengi i Kredit*, No. 5, 1956) from livestock and plant produce, on which 5.0 billion roubles tax would have been paid; other income was 7 billion roubles, on which 6 per cent tax is assumed to have been paid—viz., 0.4 billion roubles. The total tax paid by collective farms thus appeared to be 7.8 billion roubles; but as the 1956 tax receipts were 7.6 billion roubles and the 1957 Plan 9.6 billion roubles (cf. 1957 budget speech) the 1955 tax receipts were estimated at a rounded 7 billion roubles.
- 16 B j. Forest fees paid by collective farms were the other half of the sum noted in item 16 B c.
- 16 B k. The agricultural tax was assumed unchanged from 1954, when it was given in the budget.
- 16 B l. Other agricultural taxes were roughly estimated, but this revenue item was known to be small.
- 16 B m. Direct taxes were given as such in the budget (as 48 billions), and to accord with the definition of the present item were then reduced by items 16 B k and l.
- 16 B n. Other revenue from persons was obtained as the residual of all taxes from persons—the budget report gave revenue from the socialist sector (cf. Table A).
- 17 A. Service and redemptions of the national debt were taken from the budget report.
- 17 B. Receipts from the flotation of the mass loan (given in the budget) were included among transfers on current account from the population to the Government. This classification seemed appropriate in the light of the moratorium on service and repayment of this and other loans until 1977-1997 (*Izvestia*, 20 April 1957).
- 18 A a. Subsidies were obtained as a residual. The various salary outlays, investments and social insurance premia were subtracted from the budgetary head "Expenditure on the national economy" after deduction of expenditure on goods. This left a combined residual purchase of goods for current use plus subsidies. The former was itself roughly estimated as (i) that part of expenditure on agriculture not attributable to subsidies or wages (cf. Appendix Table C) plus (ii) a smaller sum for other expenditure on goods (notably for goods bought by planning offices, current repair of buildings with functions of economic administration, etc.). The final residual was taken to represent the value of subsidies.
- 18 A b. Subsidies to M.T.S. (the derivation of which is shown in Table A) were separately computed in view of their intermediate status between farm and non-farm enterprises (see text).
- 18 A c. Compensation for losses on state agricultural procurement were introduced after the increases in state procurement prices in September 1953, the state wholesale prices at which procurement agencies sold the goods procured remaining unchanged until 1955. The 1955 budget planned 23 billion roubles under this head; the procurement plan was, however, cut after the bad harvest in the Ukraine and neighbouring areas, and expenditure on procurement subsidies is reduced roughly *pro rata*. Only one minor procurement price increase (for hides) took place in 1955; but this expenditure would have been planned at the time of the budget, since the increase was effective from March 1955.
- 18 A d. Subsidies to state farms were obtained directly from Appendix Table C.
- 20 A. Capital grants to enterprises were taken from Table E, those to state farms being shown separately as item 20 A b (derived from Table C).

TABLE E  
Finance of gross state investment  
(Billions of current roubles)

	1955 Plan <sup>a</sup>	1955 actual
Budget grants . . . . .	109.3	123 <sup>b</sup>
Retained profits . . . . .	11.9	11 <sup>c</sup>
Depreciation charges . . . . .	21.8	22 <sup>d</sup>
Sales to co-operatives <sup>e</sup> . . . . .	2.3	2 <sup>d</sup>
	145.3	158 <sup>e</sup>

<sup>a</sup> SURVEY for 1955, Table 99.

<sup>b</sup> Residual.

<sup>c</sup> Planned retention of profits was 25.7 billion roubles, and actual 22.5 billion or an 87.5 per cent fulfilment of plan. Each head of expenditure of retained profits was assumed to have been more or less proportionately reduced.

<sup>d</sup> Actual expenditure was assumed to have been as planned.

<sup>e</sup> See explanation of item 5 D a.

- 21 A. New loans by the state banking system were derived as net expansion of all bank credit less that part covered by deposits in the Savings Bank by households. The expansion of bank credit in 1955 was derived as follows. The increase shown for State Bank credits in 1955 was 10 billion roubles (see SURVEY for 1955, p. 214). The investment banks' increase during the Fifth Five-year Plan was 14 billion roubles, since (i) the State Bank increase during the same period was 33 billion roubles (*loc. cit.*); (ii) the aggregate of the State Bank's and investment banks' increase was 47 billion roubles (Zverev, *Planovoe Khozyaistvo* No. 1, 1956, p. 15), and (iii) investment bank credits totalled over 40 billion roubles by the end of 1955 or one and a half times 1950 (Zverev, *Izvestia*, 27 December 1955). (It should be observed that the SURVEY, *loc. cit.*, showed an error for credits outstanding in investment banks.) The increase in investment bank credit was assumed to have been rather more than one-fifth of the Five-year Plan increase—viz., 4 billion roubles.
- 23 A. The unexplained item arises from the excess of government revenue over the sum of government expenditure and net increase in bank liabilities.

#### Non-farm enterprise sector

- 2 D a. State farm wages were obtained as the product of the numbers employed and an estimate of the average earnings of a state farm worker. 2,832,000 workers were employed (*Narodnoe Khozyaistvo S.S.S.R.*, p. 134). The wages of state farm workers in 1937 and in the 1942 Plan were 70 per cent of the average wage; if the same relationship held good for 1955, the wage in that year would have been 5,876 roubles per man (at the end of 1955 wages were raised by 52 roubles per month, *Selskoe Khozyaistvo*, 18 December 1955, which would have brought the wage here estimated to 6,500 roubles). These wages include the value of payments in kind, but these have not been separately distinguished.
- 2 D b. Hire of labour "on many collective farms" was "15 per cent or more" of money income devoted to productive uses (*Dengi i Kredit*, No. 5, 1956, p. 21). Productive money outlay was derived in item 10 D c as 23 billion roubles, of which 15 per cent is 3.5 billion roubles (3 billion roubles was taken as the 15 per cent apparently exceeded average). The 2 billion roubles administrative staff salaries were added and total hired labour shown to earn 5 billion roubles.
- 2 D c. Total money receipts of collective farms in 1955 were 75.6 billion roubles (*Narodnoe Khozyaistvo S.S.S.R.*, p. 128) of which "up to 40 per cent" was distributed as labour-days (*Kommunist*, No. 1, 1956, p. 38): thus the money income of collective farmers from the farms was 30 billion roubles.
- 2 D d. Dividends from fishing co-operatives to members were taken as equivalent to sales to the state (item 10 C d) in view of the small magnitude of their other expenditure (taxes, investment and dividend in kind).
- 2 D e. Total farm market sales were 48.9 billion roubles (*Sovetskaya Torgovlya*, p. 19); 15.6 billion roubles were received by collective farms from sales on farm markets, and, implicitly, from commission sales (percentage in *Dengi i Kredit*, No. 5, 1956, p. 20, applied to income in *Narodnoe Khozyaistvo S.S.S.R.*, p. 128); of these 15.6 billion roubles, 4 billion were commission sales, leaving 12 billion to be deducted from total farm market sales to derive sales by households. These sales also comprised sales in farm markets by workers (including state farm workers) from their private plots and by members of fishing co-operatives from their dividends in kind, their own catch and their private plots.
- 2 D f. Commission sales consist of produce deposited for sale by collective farms or farmers in co-operative shops and were part of co-operative trade turnover (cf. N. P. Titelbaum, *Statistika sovetskoy torgovlyi*, 1955, p. 10). *Sovetskaya Torgovlya*, 10 July 1956, quoted figures for various products sold on commission which showed that about three-quarters of these sales were on behalf of farms, and one-quarter on behalf of farmers. The total of commission sales in 1955 was 4.9 billion roubles (*Sovetskaya Torgovlya*, 10 July 1956)—viz., almost 4 billion from collective farms and 1 billion for sales by private holdings (sales from collective farmers and workers' plots and members of fishing co-operatives).

- 2 D g. Identical with 10 C e.
- 2 D h. The share of social security pension and other transfer payments was taken as equal to half receipts of military pensions.
- 2 D i. Identical with 16 B k.
- 2 D j. Identical with 16 B l.
- 2 D k. A rough estimate was made for investment in purchased materials on private holdings (new productive buildings, but not farmers' housing, which was included as item 2 D l).
- 2 D l. Investment by farm households was computed from the number of houses built (600,000 according to *Izvestia*, 31 January 1956) and an estimate of 8,000 to 9,000 roubles for materials for each house.
- 3 D a. Retail turnover through state and co-operative shops was given in *Sovetskaya Torgovlya*, 1956, p. 7, as 501.9 billion roubles, of which (see explanation of item 2 D f) 5 billion roubles were on commission for collective farms and private farm holdings and a roughly estimated 1/3 per cent of retail turnover (the ratio for the Netherlands) or 1.5 billion roubles (rounded to 2 billion) for commission sales by pawnbrokers (*komissioniye magaziny*). Retail turnover covers also small wholesale trade (*melkooptovaya torgovlya*) the distribution of which was given in N. P. Titelbaum, *op. cit.* p. 10, as one-third for the non-productive needs of organizations and enterprises (food for crèches, hospitals, sanatoria, rest-homes), one-third for the current needs of organizations and enterprises (office furniture, office requisites, brooms, brushes, etc.), and one-third producer goods and other sales to collective farms. Titelbaum, *loc. cit.*, stated that purchases of producer goods by enterprises (cloth, thread, buttons by tailors' shops, building materials, etc.) were excluded from retail turnover figures. *Sovetskaya Torgovlya*, No. 1, 1956, p. 7, stated that the 1956 Plan provided that 7.6 per cent of retail turnover be to institutions (including collective farms) and that these sales would be 7 per cent greater than in 1955. The same source (p. 1) stated the 1956 global plan to be 8 per cent above 1955, viz. 542 billion roubles, whence the sales to institutions in 1955 were shown to be 38 billion roubles.

The estimated composition of retail turnover through state and co-operative shops is given in Table F.

TABLE F  
Break-down of sales by state and co-operative stores  
Billions of roubles

To persons of consumer goods . . . . .	447
To private holdings and persons of producer goods . . . . .	10
To collective farms . . . . .	12
To state organizations and enterprises for non-productive needs (not separated from government purchases) . . . . .	13
To state enterprises for current needs (excluded as being transactions within the sector of non-farm enterprises) . . . . .	13
On commission sales . . . . .	5
In state commission shops (excluded as being transactions within the sector of non-farm households) . . . . .	2
	502

Retail turnover figures cover repair and certain custom services, like tailoring, but not other services (theatres, laundries, hairdressers, bath-houses, etc.) cf. A. Yezhov, *Soviet Statistics*, 1957, p. 86.

- 3 D b. Expenditure on entertainment was derived from the number of audiences in 1955 in places of entertainment (given in *Kulturnoe Stroitelstvo S.S.S.R.*, 1956) and multiplied by an average seat price, as shown in Table D. Museum entries were however included under item 16 B n.
- 3 D c. Rent payments were derived from the dwelling area which in 1955 was 640 million square metres in urban and urban-type areas, according to *Narodnoe Khozyaistvo S.S.S.R.*, p. 163, of which 432 million square metres were publicly and 208 million square metres were privately owned. Rent on publicly owned property was 1.32 roubles per square metre, or 15.8 roubles per year. This is charged only upon living-area, which represents on average 70 per cent of the total area (information supplied by the Soviet authorities for E.C.E., *The European Housing Situation*, Geneva, 1956, p. 38)—viz., upon 302 million square metres. Rent paid would thus be 5 billion roubles a year on publicly owned dwellings. Owner occupiers would have to cover the full repair costs themselves; these are a significant part of the expenditure of housing administrations, two-thirds of whose income is rent and which pay no interest charges, often neglecting amortization charges (cf. A. Goldenberg, *Osnovnoye voprosy organizatsii finansov zhilishchnogo khozyaistva*, 1950, pp. 66 and 79). Private expenditure on repairs and re-decoration, other than by purchase of materials for self-application (such purchases form part of item 3 D a) was estimated at 3 billion roubles a year. Rent payments and repair services thus totalled



The distribution of postal etc. charges between enterprises and persons (last column of Table G) was extremely rough. M. Kolganov, (*Voprosy Ekonomiki*, No. 11, 1955), quoted 70 per cent of telegraph and telephone costs in the United States of America as being paid by private individuals: the share must certainly have been lower—say 40 per cent—in the Soviet Union. Postal services were assumed to have been privately used for 50 per cent of the letters and 80 per cent of the parcels; while periodicals are of their nature almost entirely despatched by enterprises.

3 D g. Trade union dues were one-half per cent of wages for those workers earning up to 500 roubles per month and one per cent for those earning 700 roubles per month, with intermediate proportions for those earning 500-700 roubles per month (*Trud*, 18 October 1953). As the average wage was about 700 roubles per month, the one-half per cent rate was applied to three-quarters of the "partial" wage bill fund (cf. item 11 Ca), and the one per cent rate to the remaining quarter—viz., one-half per cent of 300 billion roubles (1.5 billion) and one per cent of 100 billion roubles (1.0 billion). The aggregate of 2.5 billion roubles was deflated by 15 per cent to eliminate non-union workers, since there were 40.42 million trade unionists in mid-1954 (*Trud*, 10 June 1954), while at that time there were 47.3 million workers (*Narodnoe Khozyaistvo S.S.S.R.*, p. 189). Thus trade union dues were 2.1 billion roubles. Communist Party membership was 7.2 million in 1955 (*Pravda*, 15 February 1956): each member was assumed to have paid on average 2 per cent of his income, whence party dues would amount to 1.1 billion roubles. Other organizations (Komsomol, Dosaav, professional societies, etc.) were assumed to have a subscription income of 1 billion roubles per year.

3 D h. Other service expenditure was computed from as many sub-totals as could be quantified but covered all service items specified in N. A. Kokovin, *Kommunalnaya statistika*, 1956.

Domestic electricity consumption was roughly estimated at 10 billion kWh., since consumption for non-industrial and non-transport purposes was 23 billion kWh. in 1955 (this figure was communicated directly to the E.C.E. by the Soviet Government in reply to a questionnaire on energy and differs from the figure given as "other" in *Promyshlennost S.S.S.R.*, 1957, p. 20, by excluding building and urban transport consumption). The figure of 10 billion kWh allowed approximately 100 kWh per person per year for those assumed to be served. The tariff was 35 to 40 kop./kWh., varying, it is believed, as between hydro and thermal supplies: more towns were consequently on the higher rate. The cost of supplies was thus 4 billion roubles. Domestic gas supplies in 1955 were 1,375 million cubic metres (*Promyshlennost S.S.S.R.*, p. 156), or, at 4 kopeks per cubic metre, 55 million roubles. Water consumption was estimated at 4 billion cubic metres (viz., the average of the 1937 and 1942 Plan figures given in *Treti Pyatiletny plan*, 1939, p. 189), inflated by the increase of 183 per cent shown for the R.S.F.S.R. in *Narodnoe Khozyaistvo R.S.F.S.R.* 1957, p. 363, between 1939 and 1956, or 2.6 billion roubles. From the same sources, the number of baths taken in municipal baths was estimated at 500 million, the average charge being taken as 1.20 roubles (viz., between that for a second-class and that for a third-class bath) and aggregating 0.6 billion roubles. The output of laundries was estimated from the same sources as 200,000 tons, which at 1 rouble per kg. of washing implied 0.2 billion roubles charges. The number of visits to hairdressers was roughly estimated at 2 billion, each costing 1.50 roubles—viz., an aggregate expenditure of 3 billion roubles. The average price of a hotel room appeared from P. A. Kuptsov, *Gostinichnoe Khozyaistvo*, 1956, p. 40, to be 12 roubles (assuming a preponderance of shared double rooms and of second- and third-grade hotels). Moscow may be estimated to possess some 10,000 hotel beds (from the list of hotels given in *Moskva-Kratkaya adretnopravochnaya kniga* 1956, pp. 288-289), for a population of 4.8 million. For other towns it was estimated that there were 50 hotel beds for every 50,000 population in towns with over 20,000 inhabitants. *Narodnoe Khozyaistvo S.S.S.R.*, p. 27, gave urban population by size of town, whence an estimated bed capacity of 170,000 was computed. Over a year, at 90 per cent capacity use, these would represent 55 million nightly users, or 0.6 billion roubles of bills. One-third of these were assumed to be privately paid for, the others to be paid for by organizations. Charges for stays at holiday homes and sanatoria were in general one-third of cost: the social insurance budget for such stays in 1956 was planned at 1.5 billion roubles (*Soviet Weekly*, 6 September 1956) whence it was computed that individuals paid 0.7 billion roubles.

Aggregate outlay on services was thus made up as follows:

	Billions of roubles
Domestic electricity . . . . .	4.0
Domestic gas . . . . .	0.1
Domestic water . . . . .	2.6
Public baths . . . . .	0.6
Laundries . . . . .	0.2
Hairdressing . . . . .	3.0
Hotels . . . . .	0.2
Holiday homes . . . . .	0.7
	11.4

The rounding to 12 billion roubles was intended to allow for miscellaneous services.

3 D i. Income in kind of workers was the roughest of estimates. *Promyshlennost S.S.S.R.*, 1957, p. 28, showed for 1955 that 0.2 per cent of the industrial wage was paid in kind. This percentage was applied to the wage fund, as shown in the explanation of item 11 Ca—viz., one billion roubles. Supplies of clothes, meals, lodging, medicaments, etc., to institutional labour were roughly estimated at 4 billion roubles.

3 D j. Identical with 2 D.

5 D a. State investment was 149.9 billion roubles (*Narodnoe Khozayaistvo S.S.S.R.*, p. 159), of which 6 billion roubles was on state farms (and separately shown as item 6 D a). It is clear that co-operative investment (items 5 D b and c) was not included in this figure of 150 billion roubles, since the 1956 Plan results (*Izvestia*, 31 January 1957) quoted 1956 investment by state and co-operative organizations as 186 billion roubles, or 17 per cent more than in 1955—i.e., 159 billion in 1955. The figure of 149.9 billion roubles was, however, at 1 July 1955 prices, and the actual prices ruling for the first half of the year, so far as investment costs were concerned, were probably about 15 per cent above those established in the 1 July price lists (cf. price indices quoted in the SURVEY for 1956, Chapter I, Table 6). Investment in the first half of the year was 62 billion roubles in 1 July 1955 prices (*Pravda*, 2 August 1956), or consequently about 72 billion roubles in current prices. Ten billion roubles were therefore added to the 150 billion in July prices. Two billion roubles were deducted since equipment to this value was sold to co-operative industry (cf. Table E).

5 D b, c. Capital investment by both types of co-operative was derived as total profits *plus* loans *less* taxes. The aggregate of these two items was confirmed by the difference between the totals for state and co-operative investment (159 billion roubles) and state investment only (150 billion roubles) quoted in the explanation of item 5 D a.

6 D a. State farm capital investment was made equivalent to the capital grant of 6 billion roubles (cf. Table C), since on balance there was no or virtually no net profit from state farms (i.e., net of inter-farm compensation for losses). This investment was considered wholly as purchases from non-farm enterprises, since most construction work was performed on contract by building enterprises.

6 D b. Collective farm investment was 18.8 billion roubles (*Narodnoe Khozayaistvo S.S.S.R.*, p. 159), of which 80 per cent was assumed to be purchased materials and 20 per cent livestock increase and building by own labour—viz., 3.7 billion roubles—included as item 6 F. The value of livestock increase was also checked from the annual increment and estimates of animal values.

8 D. Investment by non-farm households in housing was taken from the SURVEY for 1955, Table 98, and classified as purchases of materials and building services from non-farm enterprises.

9 D. The planned increase in working capital in 1955 was 17 billion roubles (SURVEY for 1955, Table 98). Actual grants by the State were 6 billion roubles (Appendix Table A); the increase in bank loans to state enterprises was 5 billion roubles of which some 1 to 2 billion roubles may have been for working capital; provision from retained profits was estimated at 5 to 6 billion roubles (7.5 billion roubles were planned, but in fact retained profits as a whole amounted to only 22.5 billion roubles, against 25.7 billion roubles planned). The total increment was estimated at 13 billion roubles.

10 C a. State farms were estimated to have supplied about one-quarter of state procurements by value. This estimate was based upon references to individual crops (in *Finansy S.S.S.R.*, No. 5, 1955, p. 13, and elsewhere), and allowed for the concentration of state farms upon higher unit-value crops such as fruit, grapes and eggs, and for the substitution in collective farm procurements of low-value crops for high value quotas (e.g., hay for eggs). Procurements from collective farms in 1955 were 55 billion roubles and from private persons 5 billion roubles (see items 10 C b and e). Thus state farm receipts were about 20 billion roubles.

10 C b. Purchases from collective farms for state procurement were, according to *Dengi i Kredit* No. 5, 1956, 73.0 per cent of collective farm money income in 1955, which was quoted as 75.6 billion roubles in *Narodnoe Khozayaistvo S.S.S.R.*, p. 128.

10 C c. Purchases from subsidiary enterprises of collective farms were taken as identical with other money income not accounted for by sales to the State or on collective farms markets, which was 6.3 per cent of money income (*Dengi i Kredit*, No. 5, 1956, page 20). The standard farm accounts form showed this other income to be largely sales of goods by the farm's subsidiary enterprises (e.g., preserving and pickling foods, cutting and sawing timber, handicrafts, etc.).

10 C d. Purchases from fishing co-operatives were obtained as the product of their output (1 million tons according to *Rybnoe Khozayaistvo*, No. 7, 1956) and an estimated average procurement price of 2 roubles per kilogramme (based on the retail price of fish, probable costs of transport and the likely profit of the State).

10 C e. Purchases from collective farmers were derived from a series 1952 to 1955 of income from state sales of collective farms (obtained by applying percentages of income given in *Dengi i Kredit* No. 5, 1956, to income as given in *Narodnoe Khozayaistvo S.S.S.R.*, p. 128), and the statements that the aggregate of purchases from farms and farmers were (i) in 1953 12 billion roubles greater and in 1954 25 billion roubles greater than in 1952 (*Dengi i Kredit*, No. 5, 1955, p. 11); (ii) 45 per cent greater in 1953 than in 1952 (*Sotsialisticheskoe Selskoe Khozayaistvo*, No. 9, 1954, p. 29). It was thus shown that 1954 sales were 4.7 billion roubles and, as no quota changes and only one price change (an increase for hides) were made in 1955, receipts in 1955 were put at 5 billion roubles.

10 D b. Purchases by state farms were taken as subsidies (3 billion roubles) and receipts from sales (20 billion roubles) *less* wages (17 billion roubles).

10 D c. Purchases by collective farms were taken as the difference between all receipts and all other payments and checked with the collective farm purchases shown in Table F. The break-down of the expenditure of collective farms was estimated as follows:

	Billions of roubles
Taxes and insurance (items 16 B i, j and 15 B) . . . . .	10
Productive expenditure	
M.T.S. payments (item 10 D d) . . . . .	9
Hired labour (part of item 2 D b) . . . . .	3
Purchases (residual) (part of item 10 D c) . . . . .	11
Administration (3.7 per cent of total, <i>Dengi i Kredit</i> , No. 5, 1956, p. 22) . . . . .	3 <sup>a</sup>
Indivisible funds (14 per cent: 12-20 per cent was laid down in the model farm by statutes, and 15 per cent was shown for 1954 in <i>Narodnoe Khozayaistvo S.S.S.R.</i> , p. 128) (saving) <sup>b</sup>	10
Money dividends paid for labour days (item 2 D c) . . . . .	30
Total ( <i>Narodnoe Khozayaistvo S.S.S.R.</i> , p. 128) . . . . .	76

<sup>a</sup> Of which 2 billion for staff (rest of item 2 D b) and 1 for materials (estimated) (rest of item 10 D c).

<sup>b</sup> Item 6 D b less 21 F.

Other expenditure listed in the standard accounts of collective farms was believed to be negligible: payments to agronomists by farms did not take on major proportions until November 1955 (*Selskoe Khozayaistvo*, 31 August 1955) and even if all the agronomists working in collective farms (*Narodnoe Khozayaistvo S.S.S.R.*, p. 152) were paid from farm funds, the total would not exceed 1 billion roubles; cultural expenditure seems to have been less than 1 per cent of farm expenditure.

10 D d. Receipts of M.T.S. were based on the receipts shown in the 1952 budget inflated by the subsequent increase in work performed by the M.T.S., and then checked against the 1956 receipts (given in the 1957 budget speech as 10.8 billion roubles).

11 C a. The aggregate wage bill of all workers and employees in the national economy was obtained by multiplying their number (48.4 million on the average in 1955—*Narodnoe Khozayaistvo S.S.S.R.*, p. 189) by an estimated average wage of 8,520 roubles (for derivation, see explanation of item 1 B b)—viz., 412 billion roubles (which represents the "partial" wage fund). Wages from this "partial" fund listed under other items of the present accounts were deducted—viz., 74 billion roubles for civil servants under item 1 B b (wages paid from national economy, social-cultural and administrative appropriations), 18 billion roubles for M.T.S. staff under item 11 C b, 17 billion for state farm workers under item 2 D a, and 1 billion as part of item 12 C.

11 C b. Wages of M.T.S. staffs are shown in Table A and explained under item 1 B b.

11 C c. Premia from enterprise funds and winners in socialist emulation were taken as the same as that planned in the 1956 budget (*Planovoe Khozayaistvo*, No. 1, 1956).

11 C d. Other wages and personal income from enterprises are the discrepancy between income and outlay and are probably to be accounted for by the excess of the "full" wage fund, comprising workers not registered as in the "national economy" (for definitions, see *Slovar-spravochnik po sotsialno-ekonomicheskoy statistike*, 1944, p. 264), over the "partial" wage fund. Other wages comprised within the "full" wage are part of the remainder of item 1 B b and items 11 C e and 2 D b. The present item also includes dividends to members of retail co-operatives.

11 C e. Earnings of members of industrial co-operatives were obtained as the product of the 1955 number of members (1.8 million according to *Narodnoe Khozayaistvo S.S.S.R.*, p. 189), and an estimated average annual income of 7,000 roubles. Fishing co-operatives and rural handicrafts co-operatives (where subsidiary to farms) were put in the state and collective farm sector; retail co-operatives' wage payments are in item 11 C a and their dividends under item 11 C d.

12 C. Identical with item 3 D i.

15 D. There was no insurance scheme for state enterprises, damage being compensated by budget grants. The premia paid by non-farm co-operatives were negligible in terms of the units used in the present accounts.

21 D a. Credits to state enterprises were obtained as the 14 billion rouble expansion of bank credit (see explanation of item 21 A) less credits to industrial co-operatives (item 21 D b), retail co-operatives (item 21 D c), collective farms (item 21 F) and persons (item 21 K).

21 D b. Bank credit to industrial co-operatives was taken from the SURVEY for 1955, Table 98, the plan quoted therein being assumed to have been fulfilled.

21 D c. Bank credit to retail co-operatives was obtained as the difference between retained profits (see explanation of item 16 B f) and investment (item D c).

## State and collective farm sector

2 F. Half the dividend in kind paid to collective farm members was assumed to be used for consumption, one-quarter for sale on the collective farm market, and one-quarter for seed and feed in the private plot. The money equivalent of the dividend in kind was derived from the statement that money remuneration (30 billion roubles, cf. item 2 D c) was 43.1 per cent of the total value of the labour day on R.S.F.S.R. collective farms in 1954 (*Kommunist*, No. 1, 1956,

p. 37). R.S.F.S.R. collective farms represent nearly 60 per cent of all farms and are certainly typical of the rest, with the possible exception of Central Asian farms (4 per cent of all farms). This valuation was assumed to be in terms of average realized farm prices. Use of the R.S.F.S.R. ratio would show a total income from labour days of 70 billion roubles, of which 40 billion roubles for labour-day payment in kind.

3 F a. See explanation of item 2 D e.

3 F b. See explanation of item 2 D f.

6 F. See explanation of item 6 D b.

10 F b. See explanation of item 2 F.

21 F. Credits to collective farms were assumed to be those planned (from the SURVEY for 1955, Table 98).

### Farm household sector

2 H a. Since a valuation of auto-consumption on the private holdings of collective and private farmers and state farm workers was necessary for the composition of a figure for the national income, a value was inserted into the accounts which best satisfied certain comparisons with other related entries. The figure of 40 billion roubles used should be regarded as no more than a possible figure within a wide range. It was intended to represent auto-consumption valued at the average of the prices realized on collective farm sales (viz., aggregating sales to the State on compulsory quotas, contract or supplementary sale; to retail co-operatives for commission sales; or on the farm market). This valuation at the average realized price was used for valuing farm produce in the official Soviet national income computations and was assumed to be that used for valuing collective farm dividends in kind. Two further assumptions were made. The first was that the equivalent of half the farm dividend in kind was directly consumed by farm members, and other holders of private plots—viz., including sales for consumption between farmers (*na derevenskom rynke*); the other half was assumed used for feed, seed and non-rural sales. The second assumption was that the average price at which sales in the farm market (*na kolkhoznom vnederevenskom rynke*) took place in 1955 were three times the average realized price of collective farm sales. This price index was established on the basis of the data quoted in the SURVEY for 1953, Table 23, and the SURVEY for 1956, Chapter I, Table 10, and other indications of the price-spread.

Starting from these assumptions, auto-consumption was estimated at that value (40 billion roubles) which, when added to other components of output from private holdings, would give a total which seemed reasonable in view of the share of private holdings in agricultural area and livestock numbers. The private holdings account for 3 per cent of the area and about 45 per cent of livestock numbers. If it is roughly assumed that output per hectare on the private holdings (largely vegetables) is as much as five times the average, that the productivity of livestock is at the same level in the private as in the socialized sector, and, finally, that animal products account for 30 per cent of total net agricultural output, then it follows that the private holdings account for around one-quarter (more exactly 23 per cent) of total net agricultural output. As appears from the accounts, net output (other than for auto-consumption) from the private holdings amounts to 28 billion roubles (items 3 H, 7 H and 10 H, less item 10 G). If the part sold on farm markets (item 3 H) is divided by 3 (in order to bring the total to the same price level as that in which output from state and collective farms is measured) the result is *minus* 2 billion roubles. Net output from state and collective farms, according to the accounts, was 115 billion roubles. Thus, if auto-consumption on private holdings is put at 40 billion roubles, their net output comes out as 38 billion roubles or 24 per cent of total agricultural output ( $38 + 115$  billion roubles).

This admittedly crude estimate was further tested by calculating its implications in terms of the following proportions (in every case making appropriate adjustments for differences in price basis): (a) the comparative level of the farm and non-farm population's per capita food consumption (reckoned at unified farm gate prices); (b) the "degree of autarky" in the private farm sector—i.e., the share of auto-consumption in total gross output from private holdings; (c) the share of food in total consumption in farm households; and (d) the relative levels of total consumption per capita in farm households and non-farm households. The general impression resulting from these tests was that on each score the figure of 40 billion roubles for auto-consumption gave a proportion which was not unreasonable offhand, and which seemed to be more likely than the proportion which would have resulted if auto-consumption had been estimated either at a considerably lower or higher figure, for instance 30 or 50 billion roubles.

In 1955 there were 19.7 million collective farm households (*Narodnoe Khozaystvo S.S.S.R.*, p. 128) and the 1.5 million males working on state farms (*Narodnoe Khozaystvo S.S.S.R.*, pp. 190 and 191) were assumed to equal the number of households. There were thus estimated to be 21.2 million private plots belonging to farmers. The rural population was 113 million, which, at 5 persons per household, would show 22.6 million households and thereby imply the existence of 1.4 million other households also likely to possess plots. Of these, 0.1 million belonged to individual peasants (*Narodnoe Khozaystvo S.S.S.R.*, p. 99) and 1.3 million would be owned by non-farm workers living in rural areas (whose auto-consumption is in item 2 H b). A check upon this figure of non-farm households owning plots was obtained from the numbers of family-members of workers engaged in cultivating private plots, viz., 3,360,000 persons (SURVEY for 1956, Appendix B, page 8). If on average there were  $1\frac{1}{2}$  family members working per plot, the number of plots would be 2.2 million. Of these, it would be reasonable to suppose that 1.3 million were in rural areas and 0.9 million in areas classified as urban or of urban type. From the numbers of farm holdings so derived, it may be computed that the net output per holding was 1,800 roubles.

- 2 H b. The income in kind from holdings cultivated by workers and employees was computed from estimates of production of such holdings published in *Sovetskaya Torgovlya*, No. 6, 1956. The quantities there indicated were multiplied in the one case at procurement prices, and in the other by retail prices (from SURVEY for 1953, Table 23 inflated to 1955 prices, where necessary, from *Sovetskaya Torgovlya*, p. 131). The aggregate net production appeared as 4.3 billion roubles in procurement prices and 16 billion roubles in state retail prices. The value of net production in terms of the conventional average realized prices of collective farm sales was put at some 6 billion roubles or 2,700 roubles per holding. This computation provided a rough check upon the magnitude of the net product of rural holdings as indicated in the explanation of item 2 H a. As there stated, 0.9 million of these holdings were in urban or urban-type zones, and would thus show pro rata an estimated net product of 2.4 billion roubles. These figures were believed not to include the produce of urban allotments, the holders of which numbered 17.9 million in 1953 (*Trud*, 13 February 1953). This item was also intended to cover the product of rural crafts working up primary products and such associated farm trades as smithies. The rough 4 billion roubles provided for this avoided a semblance of spurious accuracy in the sum of items 2 H a and 2 H b which thus made up a very rough 50 billion roubles.
- 7 H. The estimate of self-generated investment on private holdings was intended to cover labour (for which a rough value per house built (cf. item-explanation 7 D b) and natural increase in livestock (roughly costed per animal)).
- 13 H. No stipends or scholarships are shown as paid to farm households, since the person in receipt of such income was considered a non-farm household even though he or she, as may rarely be the case, continues to live in a farm household.
- 17 G. Purchase of state bonds by farm households is the residual of item 17 B after deduction of non-farm household purchases, which were computed as the share of income laid down in the Minister of Finance's article announcing the loan (*Pravda*, 11 May 1955).
- 17 H. Since the bonds outstanding to farm households were probably high (in the light of the peasants' large liquid assets in earlier years derived from farm market sales and of the terms of the 1947 monetary reform), the service and redemptions due to them was taken as one-quarter of the total, a higher proportion than their contributions to the current loan.

#### Non-farm household sector

- 21 J. Borrowing from persons (assumed to be exclusively non-farm households) was quoted in the Budget Report (cf. Table A).
- 21 K. Mortgage loans, of which an insignificant amount went to state farm workers, were taken as that planned (and shown in the SURVEY for 1955, Table 98).
- 22 J. Housing investment was taken as equivalent to urban private house building (as shown in the SURVEY for 1955, Table 98).

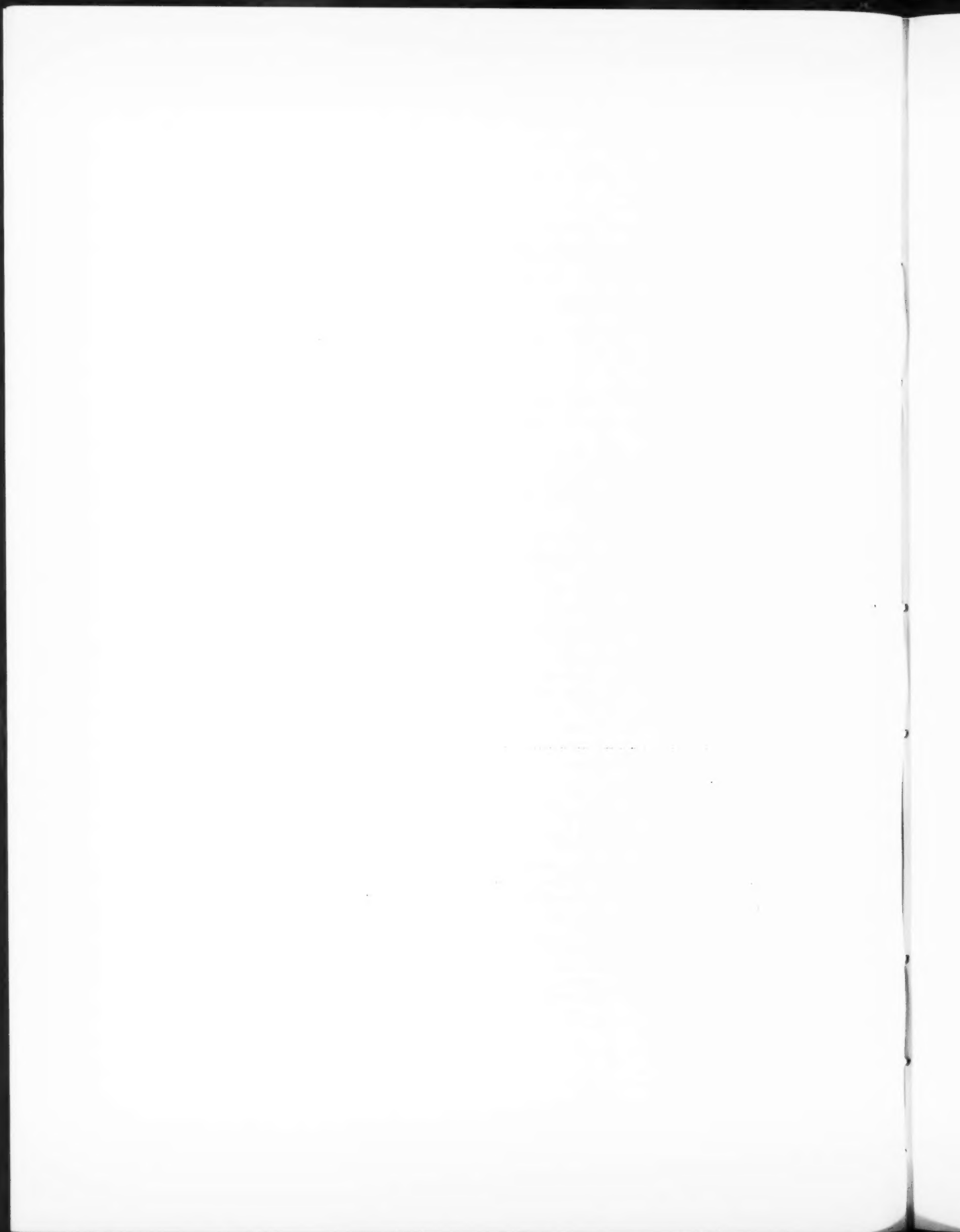
The percentage distribution of personal outlay by non-farm households may be compared with a 1955 family budget obtained in the town of Gorky and published in *Moscow News*, 30 March 1957, as shown in Table H.

TABLE H  
Comparison of the global expenditure of non-farm households  
with a sample family budget for 1955

	Account items	Present account	Household budget
		(Percentages)	
Goods and repairs <sup>a</sup> . . . . .	3 D a, 3 F, 3 H	77.6	76.0
Rent and services . . . . .	3 D c, h	3.8	4.0
Fares . . . . .	3 D d	0.8	0.8
Cultural requirements . . . . .	3 D b, 16 B n	2.2	2.4
Taxes . . . . .	16 B m	8.1	8.7
Bond . . . . .	17 J	5.3	5.7
Miscellaneous <sup>b</sup> . . . . .	3 D e, f, g	2.2	2.4

<sup>a</sup> Less 89 billion roubles for purchases by farm households.

<sup>b</sup> 5 billion roubles holiday travel and journeys to towns out of 16 billion roubles passenger travel (which includes a great deal of travel by farmers).



### Corrigenda to the "Economic Bulletin for Europe", Vol. 8, No. 3

Page 64, note to Table 13: For "Employment of wage-earners" read "Employment of wage and salary earners".

Page 73, Table 19: For "thousands of kWh" read "millions of kWh", and for "Consumption per employed person" read "Consumption per thousand employed persons".

### Corrigenda to the "Economic Survey of Europe in 1956"

#### Table of contents :

Page vii, under Index of Tables for Chapter II, read: 1. National income . . . Soviet Union Page II-1 3.

Page xii, for Table XXIV, insert under *Page (App. B)*: 8.

#### Chapter I :

Page 9, Table 10, for 1955, I Vegetables, insert "420". Delete footnote *a* after 103 in the last column.

Page 12, first column, second paragraph, third line from the end, instead of "stagnation" read "increase of only 3.4 per cent."

Page 14, Table 18, column 12, second line, instead of "11" read "11"; Rumania, retail sales, for 1954 instead of "15 d" read "13 d"; and for 1956 instead of "12 d" read "4 d".

Page 15, second column, penultimate line, instead of "November 1955" read "November 1956".

Page 18, Table 20, under Debtor—Rumania, Creditor—Soviet Union, add: "Amount of loan—450,000 tons of wheat, 60,000 tons of fodder. Period of repayment—1959-61."

Page 22, second column, third paragraph, insert, after "were undertaken", "officially motivated by the fact that in the last years compulsory deliveries began to act as a brake on agricultural development and did not push peasants to increase sown areas".

Page 23, first paragraph should read: "In Bulgaria the official criticism . . . the sown area. Consequently compulsory deliveries of grain. . . ."

#### Chapter II :

Page 5, first column, last line, instead of "practically" read "partially".

Page 16, footnote 36, fifth line after table, delete "of 'light' industries relative capital-intensity", and insert "relative capital-intensity of 'light' industries".

#### Chapter III :

Page 2, Table 1, under Textile industries, for Sweden, 1955 and Oct.-Nov., instead of "-6" and "-", read "-3" and "+3".

Page 14, Table 9, Western Germany, Total orders, for Electrotechnical equipment, Oct.-Nov. instead of "(216)" read "(180)"; and for Total metal-using industries, instead of "(151) (156) and (142)" read "(165) (171) and (155)".

Page 23, footnote 30 should be deleted after "surplus" and inserted after "strain".

Page 31, second line after text table, instead of "1955", read "1956".

Page 36, Chart 8, Key to chart of Prices of Metals and Fuels, instead of "Fuel and oil" read "Fuel oil".

#### Chapter VII :

Page 18, Table 9, figures relating to Sweden should read:

	Pre-war to		1949 to 1955
	1949	1955	
Output . . . . .	130	159	122
Employment . . . . .	105	107	102
Output per head . . . . .	124	149	120

*Chapter VIII :*

Page 2, second column, second paragraph, fourth line from end, instead of "In France and Sweden, . . ." read "In France, . . ."

Page 3, Table 1, for Sweden in 1950, instead of "59.3" read "58.2".

Page 7, Table 4, last line of table, insert footnote *k* after "Rent <sup>*db*</sup>".

*Chapter IX :*

Page 8, Table 4, under western Germany, third column, instead of "0.4" and "0.5" read ".04" and ".05".

*Appendix A :*

Table XI, Other overseas countries, 9th column, instead of "100.0" read "10.0".

Table XX, in the footnote *Sources*, instead of "Table IX" read "Table X".

Table XXII, last line, delete footnote *e*, and insert footnote *e* after "Poland, 1956 to 1960 Plan".

*Appendix B :*

Page 4, (b) *Total grain, Kazakhstan* : in the second line, instead of "of which millet . . . hectares" read "of which some will have been due to transfer from other grains, although millet may have increased by anything up to 1.5 million hectares".

Page 10. Industrial Wage Bill, in second line, instead of "Table 14" read "Table 16".

Page 30, at end of notes on "The Business Sector", instead of "total product in the private sector" read "total product in the business sector".

